DAIKIN

SiBE061121

Service Manual

Inverter Pair
Floor Standing Type K-Series

[Applied Models]

● **Inverter Pair : Heat Pump**

Inverter Pair Floor Standing Type K-Series

●Heat Pump

Indoor Unit

FVXG25K2V1B
FVXG35K2V1B
FVXG50K2V1B

Outdoor Unit

RXG25K2V1B
RXG35K2V1B
RXG50K2V1B

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1. Introduction

1.1 Safety Cautions

Cautions and Warnings

- Be sure to read the following safety cautions before conducting repair work.
- The caution items are classified into "⚠ **Warning**" and "⚠ **Caution**". The "⚠ **Warning**" items are especially important since they can lead to death or serious injury if they are not followed closely. The "⚠ **Caution**" items can also lead to serious accidents under some conditions if they are not followed. Therefore, be sure to observe all the safety caution items described below.
- About the pictograms

△ This symbol indicates the item for which caution must be exercised.
The pictogram shows the item to which attention must be paid.

◯ This symbol indicates the prohibited action.
The prohibited item or action is shown in the illustration or near the symbol.

● This symbol indicates the action that must be taken, or the instruction.
The instruction is shown in the illustration or near the symbol.

- After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates normally, and explain the cautions for operating the product to the customer.

1.1.1 Cautions Regarding Safety of Workers

⚠ Warning	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for repair. Working on the equipment that is connected to the power supply may cause an electrical shock. If it is necessary to supply power to the equipment to conduct the repair or inspecting the circuits, do not touch any electrically charged sections of the equipment.	
If the refrigerant gas is discharged during the repair work, do not touch the discharged refrigerant gas. The refrigerant gas may cause frostbite.	
When disconnecting the suction or discharge pipe of the compressor at the welded section, evacuate the refrigerant gas completely at a well-ventilated place first. If there is gas remaining inside the compressor, the refrigerant gas or refrigerating machine oil discharges when the pipe is disconnected, and it may cause injury.	
If the refrigerant gas leaks during the repair work, ventilate the area. The refrigerant gas may generate toxic gases when it contacts flames.	
The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. Be sure to discharge the capacitor completely before conducting repair work. A charged capacitor may cause an electrical shock.	
Do not start or stop the air conditioner operation by plugging or unplugging the power cable plug. Plugging or unplugging the power cable plug to operate the equipment may cause an electrical shock or fire.	

Warning	
Be sure to wear a safety helmet, gloves, and a safety belt when working at a high place (more than 2 m). Insufficient safety measures may cause a fall accident.	
In case of R-410A refrigerant models, be sure to use pipes, flare nuts and tools for the exclusive use of the R-410A refrigerant. The use of materials for R-22 refrigerant models may cause a serious accident such as a damage of refrigerant cycle as well as an equipment failure.	

Caution	
Do not repair the electrical components with wet hands. Working on the equipment with wet hands may cause an electrical shock.	
Do not clean the air conditioner by splashing water. Washing the unit with water may cause an electrical shock.	
Be sure to provide the grounding when repairing the equipment in a humid or wet place, to avoid electrical shocks.	
Be sure to turn off the power switch and unplug the power cable when cleaning the equipment. The internal fan rotates at a high speed, and may cause injury.	
Be sure to conduct repair work with appropriate tools. The use of inappropriate tools may cause injury.	
Be sure to check that the refrigerating cycle section has cooled down enough before conducting repair work. Working on the unit when the refrigerating cycle section is hot may cause burns.	
Use the welder in a well-ventilated place. Using the welder in an enclosed room may cause oxygen deficiency.	

1.1.2 Cautions Regarding Safety of Users

Warning	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools may cause an electrical shock, excessive heat generation or fire.	
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires may cause an electrical shock, excessive heat generation or fire.	
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances, since it may cause an electrical shock, excessive heat generation or fire.	
Be sure to use an exclusive power circuit for the equipment, and follow the local technical standards related to the electrical equipment, the internal wiring regulations, and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work may cause an electrical shock or fire.	
Be sure to use the specified cable for wiring between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals. Improper connections may cause excessive heat generation or fire.	
When wiring between the indoor and outdoor units, make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section may cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable may cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable may damage the cable.	
Do not mix air or gas other than the specified refrigerant (R-410A / R-22) in the refrigerant system. If air enters the refrigerating system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leaking point and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leaking point cannot be located and the repair work must be stopped, be sure to perform pump-down and close the service valve, to prevent the refrigerant gas from leaking into the room. The refrigerant gas itself is harmless, but it may generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment may fall and cause injury.	

Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet securely. If the plug has dust or loose connection, it may cause an electrical shock or fire.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation may cause the equipment to fall, resulting in injury.	For unitary type only
Be sure to install the product securely in the installation frame mounted on the window frame. If the unit is not securely mounted, it may fall and cause injury.	For unitary type only
When replacing the coin battery in the remote controller, be sure to dispose of the old battery to prevent children from swallowing it. If a child swallows the coin battery, see a doctor immediately.	

Caution	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If the combustible gas leaks and remains around the unit, it may cause a fire.	
Check to see if the parts and wires are mounted and connected properly, and if the connections at the soldered or crimped terminals are secure. Improper installation and connections may cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame may cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding may cause an electrical shock.	

Caution	
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 MΩ or higher. Faulty insulation may cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage may cause the water to enter the room and wet the furniture and floor.	
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water may enter the room and wet the furniture and floor.	For unitary type only

1.2 Used Icons

Icons are used to attract the attention of the reader to specific information. The meaning of each icon is described in the table below:

Icon	Type of Information	Description
Note:	Note	A “note” provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.
Caution	Caution	A “caution” is used when there is danger that the reader, through incorrect manipulation, may damage equipment, loose data, get an unexpected result or has to restart (part of) a procedure.
Warning	Warning	A “warning” is used when there is danger of personal injury.
	Reference	A “reference” guides the reader to other places in this binder or in this manual, where he/she will find additional information on a specific topic.

Part 1
List of Functions

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1. Functions

Category	Functions	FVXG25/35K2V1B RXG25/35K2V1B	FVXG50K2V1B RXG50K2V1B	Category	Functions	FVXG25/35K2V1B RXG25/35K2V1B	FVXG50K2V1B RXG50K2V1B
Basic Function	Inverter (with Inverter Power Control)	●	●	Health & Clean	Air-Purifying Filter	—	—
	Operation Limit for Cooling (°CDB)	10 ~ 46	10 ~ 46		Photocatalytic Deodorizing Filter	—	—
	Operation Limit for Heating (°CWB)	–15 ~ 20	–15 ~ 20		Air-Purifying Filter with Photocatalytic Deodorizing Function	—	—
	PAM Control	●	●		Titanium Apatite Photocatalytic Air-Purifying Filter	●	●
	Standby Electricity Saving	●	—				
Compressor	Oval Scroll Compressor	—	—		Air Filter (Prefilter)	●	●
	Swing Compressor	●	●		Wipe-Clean Flat Panel	—	—
	Rotary Compressor	—	—		Washable Grille	—	—
	Reluctance DC Motor	●	●		MOLD PROOF Operation	—	—
Comfortable Airflow	Power-Airflow Flap	—	—		Good-Sleep Cooling Operation	—	—
	Power-Airflow Dual Flaps	—	—	Timer	WEEKLY TIMER Operation	●	●
	Wide-Angle Louvers	●	●		24-Hour ON/OFF TIMER	●	●
	Vertical Auto-Swing (Up and Down)	●	●		NIGHT SET Mode	●	●
	Horizontal Auto-Swing (Right and Left)	—	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	●	●
	3-D Airflow	—	—		Self-Diagnosis (Digital, LED) Display	●	●
Comfort Control	Auto Fan Speed	●	●		Wiring Error Check Function	—	—
	Indoor Unit Quiet Operation	●	●		Anti-Corrosion Treatment of Outdoor Heat Exchanger	●	●
	NIGHT QUIET Mode (Automatic)	—	—				
	OUTDOOR UNIT QUIET Operation (Manual)	●	●		Multi-Split / Split Type Compatible Indoor Unit	●	●
	INTELLIGENT EYE Operation	—	—		H/P, C/O Compatible Indoor Unit	—	—
	Quick Warming Function (Preheating Operation)	●	●	Flexibility	Flexible Power Supply Correspondence	—	—
	Hot-Start Function	●	●		Chargeless	10 m	10 m
	Automatic Defrosting	●	●		Either Side Drain (Right or Left)	—	—
Operation	Automatic Operation	●	●		Power Selection	—	—
	RADIANT Operation	●	●	Remote Control	5-Room Centralized Controller (Option)	●	●
	Program Dry Operation	●	●		Remote Control Adaptor (Normal Open Pulse Contact) (Option)	●	●
	Fan Only	●	●				
Lifestyle Convenience	New POWERFUL Operation (Non-Inverter)	—	—		Remote Control Adaptor (Normal Open Contact) (Option)	●	●
	Inverter POWERFUL Operation	●	●		DIII-NET Compatible (Adaptor) (Option)	●	●
	Priority-Room Setting	—	—				
	COOL / HEAT Mode Lock	—	—	Remote Controller	Wireless	●	●
	HOME LEAVE Operation	—	—		Wired (Option)	●	●
	ECONO Operation	●	●				
	Indoor Unit ON/OFF Button	●	●				
	Signal Receiving Sign	●	●				
	R/C with Back Light	●	●				
	Temperature Display	—	—				

Note: ● : Holding Functions
— : No Functions

Part 2
Specifications

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1. Specifications

50 Hz, 220 - 230 - 240 V

Model	Indoor Unit		FVXG25K2V1B		FVXG35K2V1B	
	Outdoor Unit		RXG25K2V1B		RXG35K2V1B	
			Cooling	Heating	Cooling	Heating
Capacity Rated (Min. ~ Max.)		kW	2.5 (1.3 ~ 3.0)	3.4 (1.3 ~ 4.5)	3.5 (1.4 ~ 3.8)	4.5 (1.4 ~ 5.0)
		Btu/h	8,500 (4,400 ~ 10,200)	11,600 (4,400 ~ 15,400)	11,900 (4,800 ~ 13,000)	15,400 (4,800 ~ 17,100)
		kcal/h	2,150 (1,120 ~ 2,580)	2,920 (1,120 ~ 3,870)	3,010 (1,200 ~ 3,270)	3,870 (1,200 ~ 4,300)
Moisture Removal		L/h	1.2	—	1.9	—
Running Current (Rated)		A	3.0 - 2.9 - 2.8	4.1 - 3.9 - 3.7	4.8 - 4.6 - 4.4	6.0 - 5.7 - 5.5
Power Consumption Rated (Min. ~ Max.)		W	550 (300 ~ 790)	780 (290 ~ 1,270)	950 (310 ~ 1,150)	1,210 (290 ~ 1,460)
Power Factor		%	83.3 - 82.5 - 81.8	86.5 - 87.0 - 87.8	90.0 - 89.8 - 90.0	91.7 - 92.3 - 91.7
COP (Rated)		W/W	4.55 (4.33 - 3.80)	4.36 (4.48 - 3.54)	3.68 (4.52 - 3.30)	3.72 (4.83 - 3.42)
Piping Connections	Liquid	mm	ϕ 6.4		ϕ 6.4	
	Gas	mm	ϕ 9.5		ϕ 9.5	
	Drain	mm	ϕ 18.0		ϕ 18.0	
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	20		20	
Max. Interunit Height Difference		m	15		15	
Chargeless		m	10		10	
Amount of Additional Charge of Refrigerant		g/m	20		20	
Indoor Unit			**FVXG25K2V1B**		**FVXG35K2V1B**	
Front Panel Color			White		White	
Airflow Rate	H	m³/min (cfm)	8.9 (314)	9.9 (349)	9.1 (321)	10.2 (360)
	M		7.0 (247)	7.8 (275)	7.2 (254)	8.0 (282)
	L		5.3 (187)	5.7 (201)	5.3 (187)	5.8 (205)
	SL		4.5 (159)	4.7 (166)	4.5 (159)	5.0 (177)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	32		32	
	Speed	Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Upward		Right, Left, Upward	
Air Filter			Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.10 - 0.09 - 0.09	0.11 - 0.11 - 0.10	0.11 - 0.10 - 0.10	0.12 - 0.12 - 0.11
Power Consumption (Rated)		W	19 - 19 - 19	22 - 22 - 22	21 - 21 - 21	24 - 24 - 24
Power Factor		%	86.4 - 91.8 - 88.0	90.9 - 87.0 - 91.7	86.8 - 91.3 - 87.5	90.9 - 87.0 - 90.9
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (H × W × D)		mm	600 × 950 × 215		600 × 950 × 215	
Packaged Dimensions (H × W × D)		mm	761 × 1,030 × 314		761 × 1,030 × 314	
Weight		kg	22		22	
Gross Weight		kg	28		28	
Sound Pressure Level	H / M / L / SL	dB(A)	38 / 32 / 26 / 23	39 / 32 / 26 / 22	39 / 33 / 27 / 24	40 / 33 / 27 / 23
Sound Power Level		dB	54	55	55	56
Outdoor Unit			**RXG25K2V1B**		**RXG35K2V1B**	
Casing Color			Ivory White		Ivory White	
Compressor	Type		Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model		1YC23AEXD		1YC23AEXD	
	Motor Output	W	600		600	
Refrigerant Oil	Type		FVC50K		FVC50K	
	Charge	L	0.375		0.375	
Refrigerant	Type		R-410A		R-410A	
	Charge	kg	1.05		1.05	
Airflow Rate	H	m³/min (cfm)	33.5 (1,183)	28.3 (999)	36.0 (1,271)	28.3 (999)
	SL		30.1 (1,063)	25.6 (904)	30.1 (1,063)	25.6 (904)
Fan	Type		Propeller		Propeller	
	Motor Output	W	23		23	
Running Current (Rated)		A	2.90 - 2.81 - 2.71	3.99 - 3.79 - 3.60	4.69 - 4.50 - 4.30	5.88 - 5.58 - 5.39
Power Consumption (Rated)		W	531 - 531 - 531	758 - 758 - 758	929 - 929 - 929	1,186 - 1,186 - 1,186
Power Factor (Rated)		%	83.2 - 82.2 - 81.6	86.4 - 87.0 - 87.7	90.0 - 89.8 - 90.0	91.7 - 92.4 - 91.7
Starting Current		A	4.1		6.0	
Dimensions (H × W × D)		mm	550 × 765 × 285		550 × 765 × 285	
Packaged Dimensions (H × W × D)		mm	612 × 906 × 364		612 × 906 × 364	
Weight		kg	34		34	
Gross Weight		kg	38		38	
Sound Pressure Level	H / SL	dB(A)	46 / 43	47 / 44	48 / 44	48 / 45
Sound Power Level	H	dB	61	62	63	63
Drawing No.			3D071592		3D071593	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB / 24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB / 6°CWB	5 m

Conversion Formulae
kcal/h = kW × 860 Btu/h = kW × 3412 cfm = m³/min × 35.3

50 Hz, 220 - 230 - 240 V

Model	Indoor Unit		FVXG50K2V1B	
	Outdoor Unit		RXG50K2V1B	
			Cooling	Heating
Capacity Rated (Min. ~ Max.)		kW	5.0 (1.7 ~ 5.6)	5.8 (1.7 ~ 8.1)
		Btu/h	17,100 (5,800 ~ 19,100)	19,800 (5,800 ~ 27,600)
		kcal/h	4,300 (1,460 ~ 4,820)	4,990 (1,460 ~ 6,970)
Moisture Removal		L/h	2.9	—
Running Current (Rated)		A	7.1 - 6.7 - 6.5	7.3 - 7.0 - 6.7
Power Consumption Rated (Min. ~ Max.)		W	1,520 (450 ~ 2,000)	1,580 (500 ~ 2,660)
Power Factor		%	97.3 - 98.6 - 97.4	98.4 - 98.1 - 98.3
COP (Rated)		W/W	3.29 (3.78 - 2.80)	3.67 (3.40 - 3.05)
Piping Connections	Liquid	mm	ϕ 6.4	
	Gas	mm	ϕ 12.7	
	Drain	mm	ϕ 18.0	
Heat Insulation			Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	30	
Max. Interunit Height Difference		m	20	
Chargeless		m	10	
Amount of Additional Charge of Refrigerant		g/m	20	
Indoor Unit			FVXG50K2V1B	
Front Panel Color			White	
Airflow Rate	H	m³/min (cfm)	10.6 (374)	12.2 (431)
	M		8.9 (314)	10.0 (353)
	L		7.3 (258)	7.8 (275)
	SL		6.0 (212)	6.8 (240)
Fan	Type		Cross Flow Fan	
	Motor Output	W	32	
	Speed	Steps	5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Upward	
Air Filter			Removable / Washable / Mildew Proof	
Running Current		A	0.17 - 0.16 - 0.15	0.18 - 0.17 - 0.17
Power Consumption		W	32 - 32 - 32	35 - 35 - 35
Power Factor		%	85.6 - 87.0 - 88.9	88.4 - 89.5 - 85.8
Temperature Control			Microcomputer Control	
Dimensions (H × W × D)		mm	600 × 950 × 215	
Packaged Dimensions (H × W × D)		mm	761 × 1,030 × 314	
Weight		kg	22	
Gross Weight		kg	28	
Sound Pressure Level	H / M / L / SL	dB(A)	44 / 40 / 36 / 32	46 / 40 / 34 / 30
Sound Power Level		dB	56	58
Outdoor Unit			RXG50K2V1B	
Casing Color			Ivory White	
Compressor	Type		Hermetically Sealed Swing Type	
	Model		2YC36BXD	
	Motor Output	W	1,100	
Refrigerant Oil	Type		FVC50K	
	Charge	L	0.65	
Refrigerant	Type		R-410A	
	Charge	kg	1.6	
Airflow Rate	H	m³/min (cfm)	50.9 (1,797)	45.0 (1,589)
	SL		48.9 (1,726)	43.1 (1,521)
Fan	Type		Propeller	
	Motor Output	W	53	
Running Current		A	6.93 - 6.54 - 6.35	7.12 - 6.83 - 6.53
Power Consumption		W	1,488 - 1,488 - 1,488	1,545 - 1,545 - 1,545
Power Factor		%	97.6 - 98.9 - 97.6	98.6 - 98.4 - 98.6
Starting Current		A	7.3	
Dimensions (H × W × D)		mm	735 × 825 × 300	
Packaged Dimensions (H × W × D)		mm	797 × 960 × 390	
Weight		kg	48	
Gross Weight		kg	53	
Sound Pressure Level	H / SL	dB(A)	48 / 44	48 / 45
Sound Power Level	H	dB	63	63
Drawing No.			3D071594	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB / 24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB / 6°CWB	5 m

Conversion Formulae
kcal/h = kW × 860 Btu/h = kW × 3412 cfm = m³/min × 35.3

Part 3
Printed Circuit Board Connector Wiring Diagram

1. Indoor Unit.....7
2. Outdoor Unit.....10
   2.1 RXG25/35K2V1B 10
   2.2 RXG50K2V1B 12

1. Indoor Unit

Connectors and Other Parts

PCB (1): Main PCB

1)	S1	Connector for fan motor
2)	S2	Connector for terminal board
3)	S6	Connector for swing motor
4)	S21	Connector for centralized control (HA)
5)	S26	Connector for service PCB
6)	S30	Connector for indoor electronic expansion valve coil (motor operated valve coil)
7)	S32	Connector for indoor heat exchanger thermistor
8)	S33	Connector for room temperature thermistor
9)	S34	Connector for radiant panel thermistors
10)	S46	Connector for display PCB
11)	FG	Connector for earth
12)	V1	Varistor
13)	JB	Fan speed setting when compressor stops for thermostat OFF
	JC	Power failure recovery function ∗ Refer to page 225 for detail.
14)	F1U	Fuse (3.15A, 250V)
15)	LED A	LED for service monitor (green)

PCB (2): Display PCB

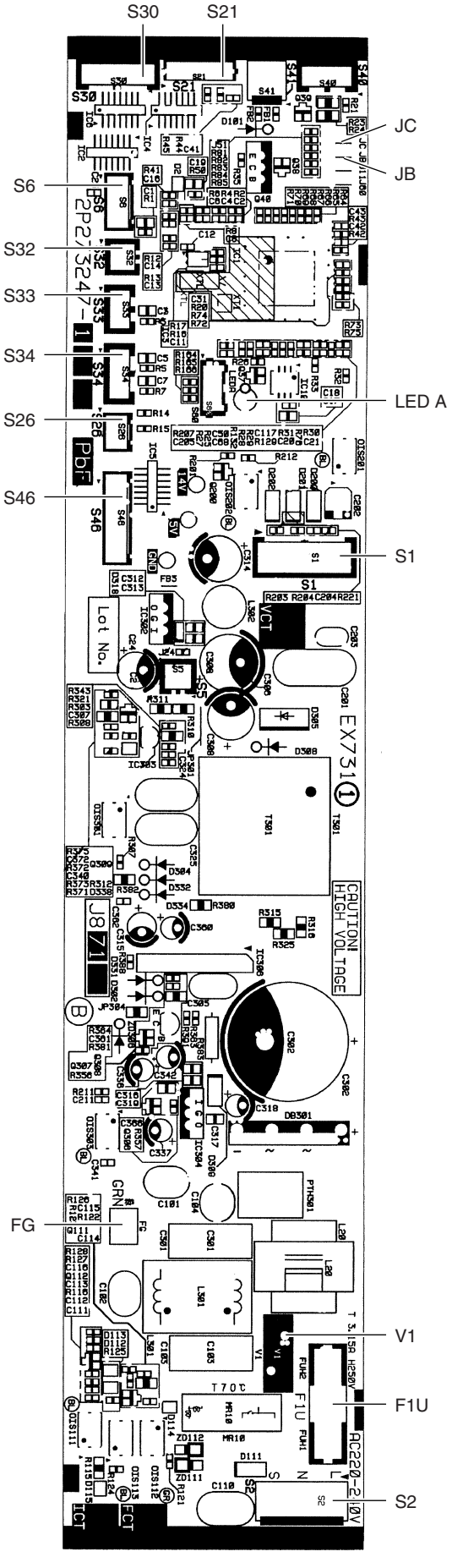
1)	S56	Connector for main PCB
2)	S1W	Forced cooling operation ON/OFF button
3)	H1P	LED for operation (green)
4)	H2P	LED for timer (yellow)
5)	H3P	LED for RADIANT operation (red)

PCB (3): Service PCB

1)	S27	Connector for main PCB
2)	S2W-1	Address setting jumper ∗ Refer to page 224 for detail.

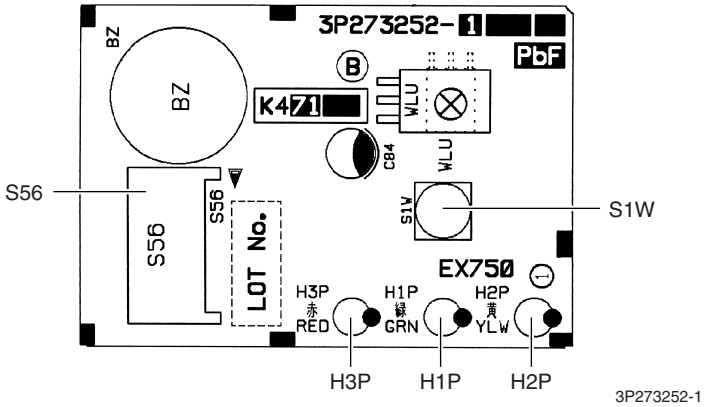
PCB Detail

PCB (1): Main PCB

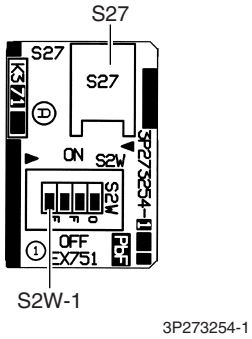


2P273247-1

PCB (2): Display PCB



PCB (3): Service PCB



2. Outdoor Unit

2.1 RXG25/35K2V1B

Connectors and Other Parts

PCB (1): Filter PCB

1)	S11	Connector for main PCB
2)	AC1, AC2, S	Connector for terminal board
3)	E1, E2	Terminal for earth
4)	HL2, HN2	Connector for main PCB
5)	HR1	Connector for reactor
6)	FU1	Fuse (3.15 A, 250 V)
7)	FU3	Fuse (20 A, 250 V)
8)	V2, V3	Varistor

PCB (2): Main PCB

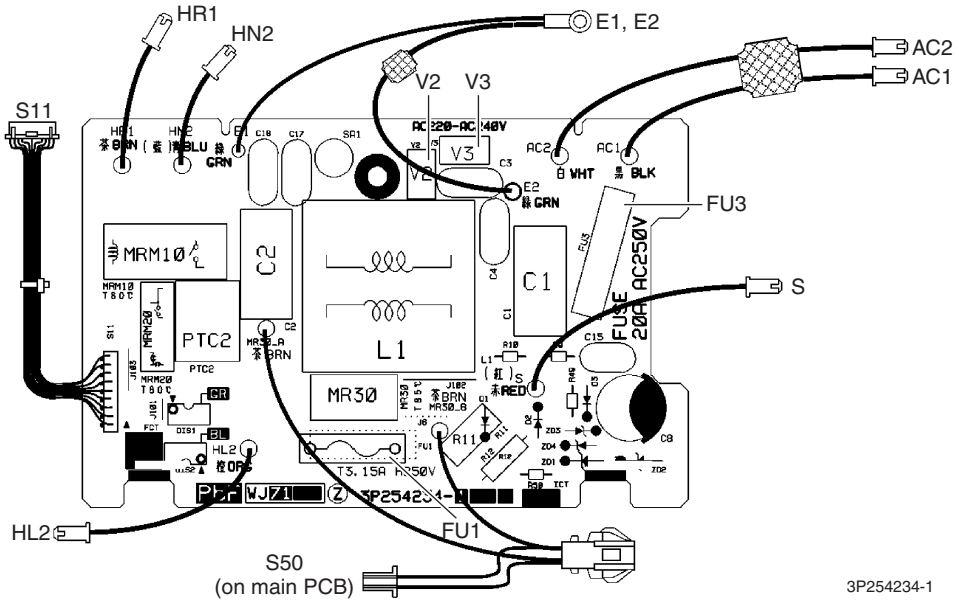
1)	S10	Connector for filter PCB
2)	S20	Connector for outdoor electronic expansion valve coil
3)	S40	Connector for overload protector
4)	S50	Connector for magnetic relay
5)	S70	Connector for fan motor
6)	S80	Connector for four way valve coil
7)	S90	Connector for thermistors (outdoor temperature, outdoor heat exchanger, discharge pipe)
8)	S100	Connector for forced cooling operation switch PCB
9)	HL3, HN3	Connector for filter PCB
10)	HR2	Connector for reactor
11)	U, V, W	Connector for compressor
12)	FU2	Fuse (3.15 A, 250 V)
13)	LED A	LED for service monitor (green)
14)	V1	Varistor
15)	J5	Jumper for improvement of defrost performance ∗ Refer to page 225 for detail.

PCB (3): Forced Cooling Operation Switch PCB

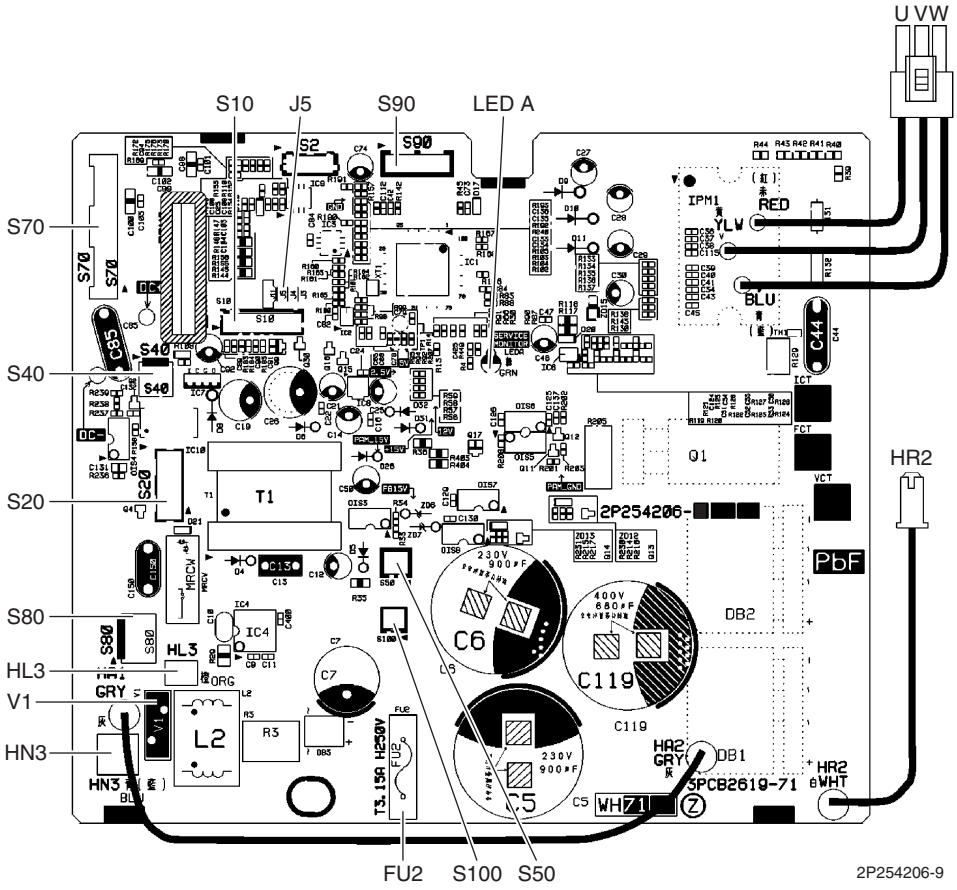
1)	S110	Connector for main PCB
2)	SW1	Forced cooling operation ON/OFF switch

PCB Detail

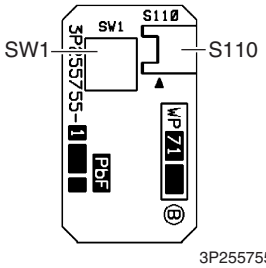
PCB (1): Filter PCB



PCB (2): Main PCB



PCB (3): Forced Cooling Operation Switch PCB



2.2 RXG50K2V1B

Connectors and Other Parts

PCB (1): Main PCB

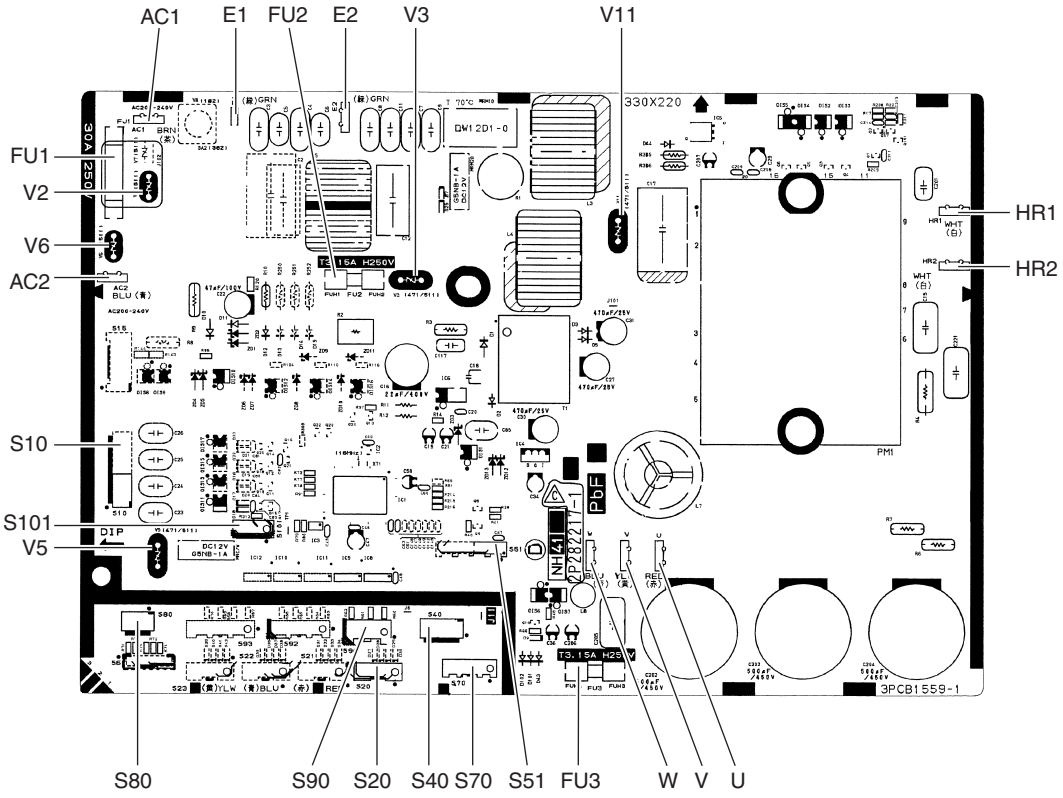
1)	S10	Connector for terminal board (indoor - outdoor transmission)
2)	S20	Connector for outdoor electronic expansion valve coil
3)	S40	Connector for overload protector
4)	S51, S101	Connector for service monitor PCB
5)	S70	Connector for fan motor
6)	S80	Connector for four way valve coil
7)	S90	Connector for thermistors (outdoor temperature, outdoor heat exchanger, discharge pipe)
8)	AC1, AC2	Connector for terminal board (power supply)
9)	E1, E2	Connector for earth
10)	HR1, HR2	Connector for reactor
11)	U, V, W	Connector for compressor
12)	FU1	Fuse (30 A, 250 V)
13)	FU2, FU3	Fuse (3.15 A, 250 V)
14)	V2, V3, V5 V6, V11	Varistor

PCB (2): Service Monitor PCB

1)	S52, S102	Connector for main PCB
2)	LED A	LED for service monitor (green)
3)	SW1	Forced cooling operation ON/OFF switch
4)	SW4-C	Switch for improvement of defrost performance ∗ Refer to page 225 for detail.

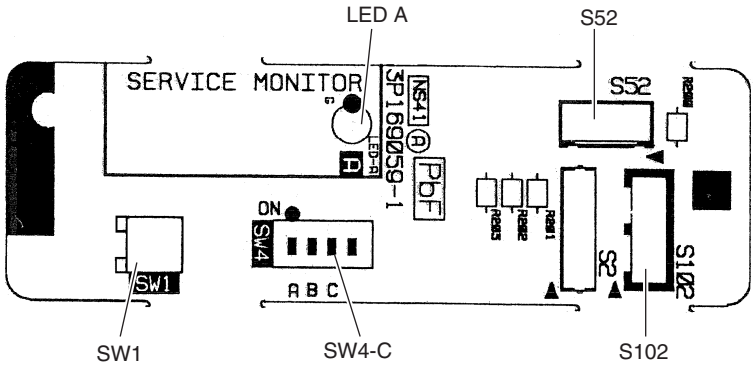
PCB Detail

PCB (1): Main PCB



2P282217-1

PCB (2): Service Monitor PCB



3P169059-1

Part 4
Function and Control

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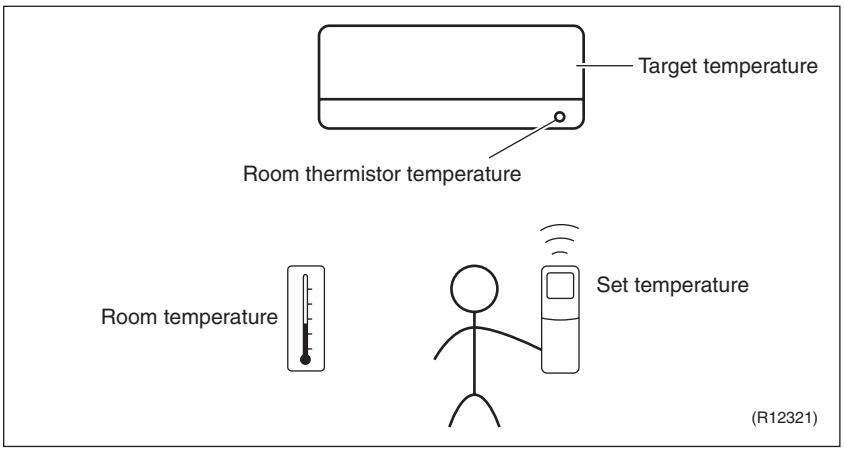
1. Main Functions

1.1 Temperature Control

Definitions of Temperatures

The definitions of temperatures are classified as following.

- Room temperature: temperature of lower part of the room
- Set temperature: temperature set by remote controller
- Room thermistor temperature: temperature detected by room temperature thermistor
- Target temperature: temperature determined by microcomputer



★ The illustration is for wall mounted type as representative.

Temperature Control

The temperature of the room is detected by the room temperature thermistor. However, there is difference between the “temperature detected by room temperature thermistor” and the “temperature of lower part of the room”, depending on the type of the indoor unit or installation condition. Practically, the temperature control is done by the “target temperature appropriately adjusted for the indoor unit” and the “temperature detected by room temperature thermistor”.

1.2 Frequency Principle

Main Control Parameters

The compressor is frequency-controlled during normal operation. The target frequency is set by the following 2 parameters coming from the operating indoor unit:

- The load condition of the operating indoor unit
- The difference between the room thermistor temperature and the target temperature

Additional Control Parameters

The target frequency is adapted by additional parameters in the following cases:

- Frequency restrictions
- Initial settings
- Forced cooling operation

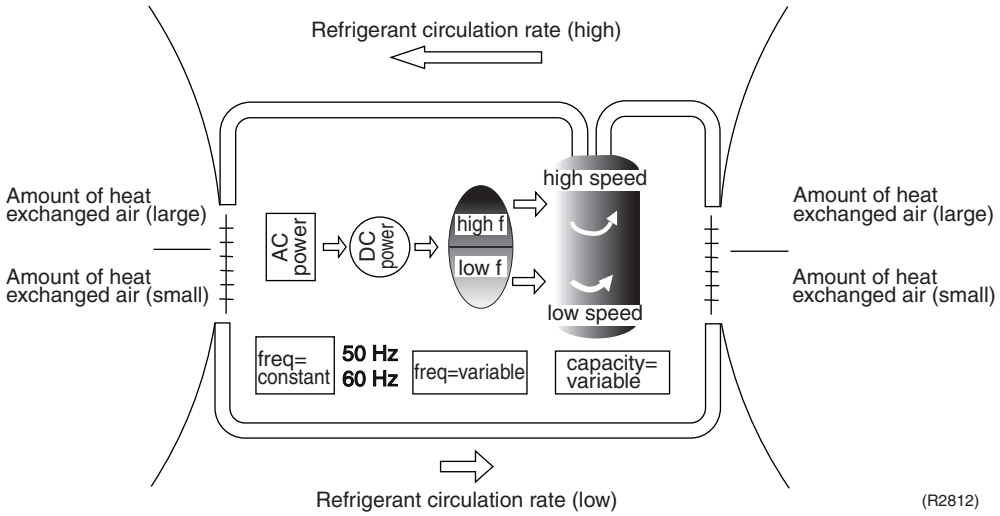
Inverter Principle

To regulate the capacity, a frequency control is needed. The inverter makes it possible to vary the rotation speed of the compressor. The following table explains the conversion principle:

Phase	Description
1	The supplied AC power source is converted into the DC power source for the present.
2	The DC power source is reconverted into the three phase AC power source with variable frequency. ■ When the frequency increases, the rotation speed of the compressor increases resulting in an increased refrigerant circulation. This leads to a higher amount of the heat exchange per unit. ■ When the frequency decreases, the rotation speed of the compressor decreases resulting in a decreased refrigerant circulation. This leads to a lower amount of the heat exchange per unit.

Drawing of Inverter

The following drawing shows a schematic view of the inverter principle:



Inverter Features

The inverter provides the following features:

- The regulating capacity can be changed according to the changes in the outdoor temperature and cooling / heating load.
- Quick heating and quick cooling
  The compressor rotational speed is increased when starting the heating (or cooling). This enables to reach the set temperature quickly.
- Even during extreme cold weather, high capacity is achieved. It is maintained even when the outdoor temperature is 2°C.
- Comfortable air conditioning
  A fine adjustment is integrated to keep the room temperature constant.
- Energy saving heating and cooling
  Once the set temperature is reached, the energy saving operation enables to maintain the room temperature at low power.

Frequency Limits

The following functions regulate the minimum and maximum frequency:

Frequency	Functions
Low	■ Four way valve operation compensation. Refer to page 34.
High	■ Compressor protection function. Refer to page 34. ■ Discharge pipe temperature control. Refer to page 35. ■ Input current control. Refer to page 36. ■ Freeze-up protection control. Refer to page 37. ■ Heating peak-cut control. Refer to page 37. ■ Defrost control. Refer to page 39.

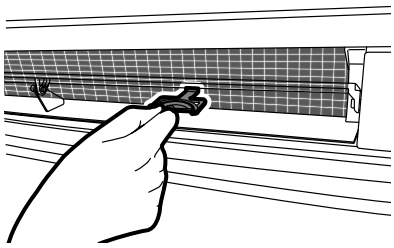
Forced Cooling Operation

Refer to page 221 for detail.

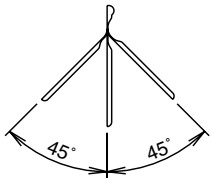
1.3 Airflow Direction Control

Wide-Angle Louvers

The louvers, made of elastic synthetic resin, provide a wide range of airflow that guarantees a comfortable air distribution.
You can adjust the position of the louvers.



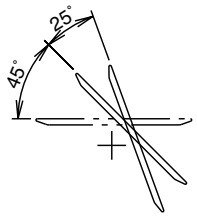
(R14632)



(R14633)

Auto-Swing

The swinging range of the flap is the same in any operation mode.



(R14634)

1.4 Fan Speed Control for Indoor Unit

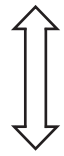
Outline

Phase control and fan speed control contains 9 steps: LLL, LL, SL, L, ML, M, MH, H, and HH. The airflow rate can be automatically controlled depending on the difference between the room thermistor temperature and the target temperature. This is done through phase control and Hall IC control.

For more information about Hall IC, refer to the troubleshooting for fan motor on page 81.

Automatic Fan Speed Control

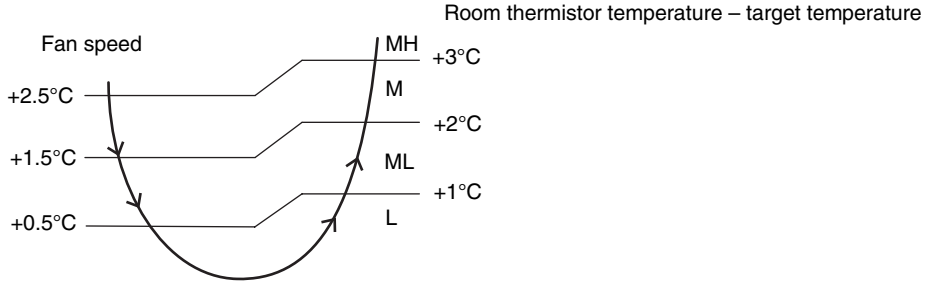
In automatic fan speed operation, the step “SL” is not available.

Step	Cooling	Heating
LLL	 (R6833)	(R6834)
LL		
L		
ML		
M		
MH		
H		
HH (POWERFUL)		

⟺ = The airflow rate is automatically controlled within this range when the FAN setting button is set to automatic.

<Cooling>

The following drawing explains the principle of fan speed control for cooling.



(R14635)

<Heating>

On heating operation, the fan speed is regulated according to the indoor heat exchanger temperature and the difference between the room thermistor temperature and the target temperature.

Note:

1. During POWERFUL operation, the fan rotates at H tap + 50 rpm.
2. The fan stops during defrost operation.

1.5 RADIANT Operation

The RADIANT operation has 2 operation modes.

- RADIANT 1: RADIANT operation with heating
- RADIANT 2: RADIANT operation only

1.5.1 Indoor Electronic Expansion Valve (Motor Operated Valve) Control

Initializing with Power ON

The indoor electronic expansion valve is initialized when turning on the power.

Opening Limit Control

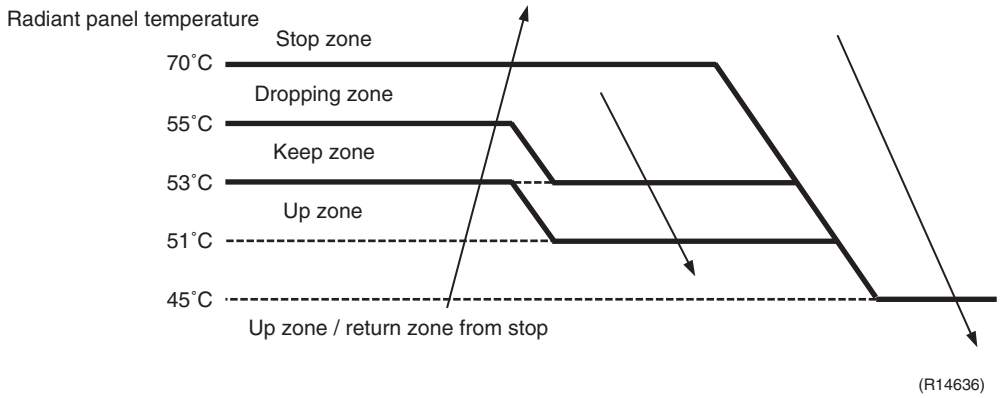
Opening limit control limits the opening of the indoor electronic expansion valve in order to keep a specified range during RADIANT operation.

Starting Operation Control

Starting operation control opens the indoor electronic expansion valve to a certain degree when starting RADIANT operation. The indoor electronic expansion valve is kept open for a certain period.

Target Panel Temperature Control

When the starting operation control finishes, the target panel temperature control starts and adjusts the opening of the indoor electronic expansion valve to achieve the target panel temperature. The panel temperature is categorized into stop, dropping, keep, up, and return zones.
(The target panel temperature is 55°C at maximum but it may be lower depending on the condition.)



Stop zone	Operation stops, the radiant panel temperature control is carried out.
Dropping zone	The opening of indoor electronic expansion valve decreases.
Keep zone	The opening of indoor electronic expansion valve is kept.
Up zone	The opening of indoor electronic expansion valve increases.
Return zone	Starting operation control is carried out.

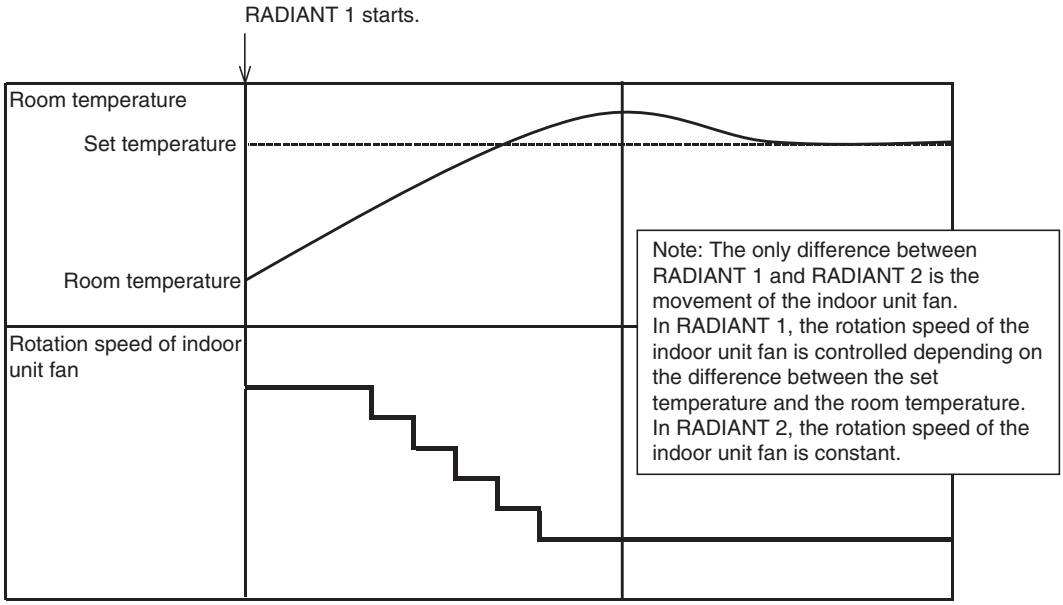
Operation Stop Control

■ **In case operation stops during RADIANT operation (including thermostat off)**
In case any of the following events occur while the indoor electronic expansion valve is open, the operation stop control makes the indoor electronic expansion valve close completely.

- Operation ON → OFF
- RADIANT 1 or RADIANT 2 is canceled.
- Thermostat off
- Defrost control

1.5.2 Indoor Unit Fan Control

The movement of the indoor unit fan is different whether in RADIANT 1 or RADIANT 2.


RADIANT 1 starts.
Room temperature
Set temperature
Room temperature
Rotation speed of indoor unit fan
Note: The only difference between RADIANT 1 and RADIANT 2 is the movement of the indoor unit fan.
In RADIANT 1, the rotation speed of the indoor unit fan is controlled depending on the difference between the set temperature and the room temperature.
In RADIANT 2, the rotation speed of the indoor unit fan is constant.

(R14637)

1.5.3 RADIANT Operation and Optional Function

Some optional function cannot be used with RADIANT 1 or RADIANT 2 at the same time.

Function	RADIANT 1	RADIANT 2
POWERFUL operation	available	not available
ECONO operation	not available	not available
OUTDOOR UNIT QUIET operation	not available	not available

1.6 Program Dry Operation

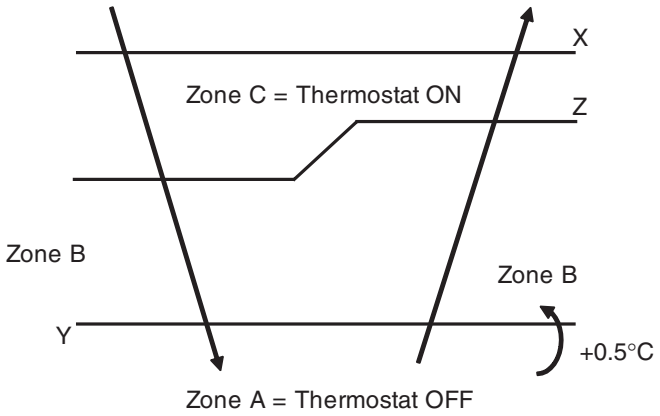
Outline

Program dry operation removes humidity while preventing the room temperature from lowering. Since the microcomputer controls both the temperature and airflow rate, the temperature adjustment and fan adjustment buttons are inoperable.

Detail

The microcomputer automatically sets the temperature and airflow rate. The difference between the room thermistor temperature at start-up and the target temperature is divided into two zones. Then, the unit operates with an appropriate capacity for each zone to maintain the temperature and humidity at a comfortable level.

Room thermistor temperature at start-up	Target temperature X	Thermostat OFF point Y	Thermostat ON point Z
24ºC or more	Room thermistor temperature at start-up	X – 2.5ºC	X – 0.5ºC or Y + 0.5ºC (zone B) continues for 10 min.
23.5ºC ~ 18ºC		X – 2.0ºC	X – 0.5ºC or Y + 0.5ºC (zone B) continues for 10 min.
17.5ºC ~	18ºC	X – 2.0ºC	X – 0.5ºC = 17.5ºC or Y + 0.5ºC (zone B) continues for 10 min.



(R11581)

1.7 Automatic Operation

Outline

Automatic Cooling / Heating Function

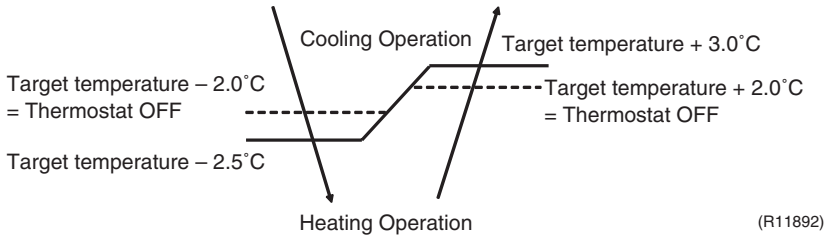
When the automatic operation mode is selected with the remote controller, the microcomputer automatically determines the operation mode as cooling or heating according to the room temperature and the set temperature at start-up.

The unit automatically switches the operation mode to maintain the room temperature at the set temperature.

Detail

Ts: set temperature (set by remote controller)
Tt: target temperature (determined by microcomputer)
Tr: room thermistor temperature (detected by room temperature thermistor)
C: correction value

1. The set temperature (Ts) determines the target temperature (Tt).
   (Ts = 18 ~ 30°C).
2. The target temperature (Tt) is calculated as;
   Tt = Ts + C
   where C is the correction value.
   C = 0°C
3. Thermostat ON/OFF point and operation mode switching point are as follows.
   Tr means the room thermistor temperature.
   (1) Heating → Cooling switching point:
   Tr ≥ Tt + 3.0°C
   (2) Cooling → Heating switching point:
   Tr < Tt – 2.5°C
   (3) Thermostat ON/OFF point is the same as the ON/OFF point of cooling or heating operation.
4. During initial operation
   Tr ≥ Ts: Cooling operation
   Tr < Ts: Heating operation



Ex: When the target temperature is 25°C
Cooling → 23°C: Thermostat OFF → 22°C: Switch to heating
Heating → 27°C: Thermostat OFF → 28°C: Switch to cooling

1.8 Thermostat Control

Thermostat control is based on the difference between the room thermistor temperature and the target temperature.

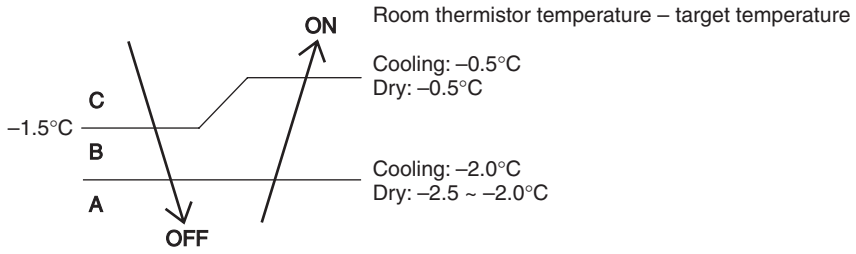
Thermostat OFF Condition

- The temperature difference is in the zone A.

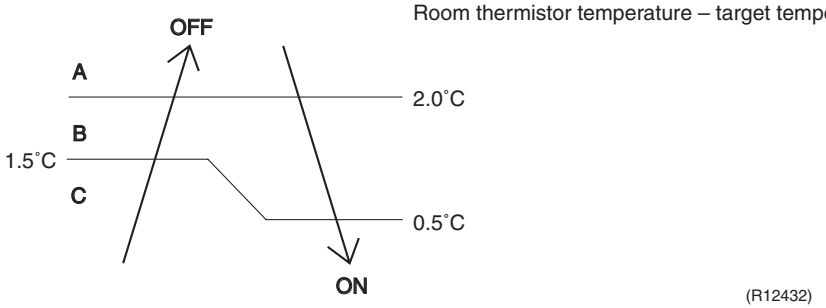
Thermostat ON Condition

- The temperature difference returns to the zone C after being in the zone A.
- The system resumes from defrost control in any zones except A.
- The operation turns on in any zones except A.
- The monitoring time has passed while the temperature difference is in the zone B. (Cooling / Dry : 10 minutes, Heating / Radiant : 10 seconds)

Cooling / Dry



Heating / Radiant



Refer to “Temperature Control” on page 15 for detail.

1.9 NIGHT SET Mode

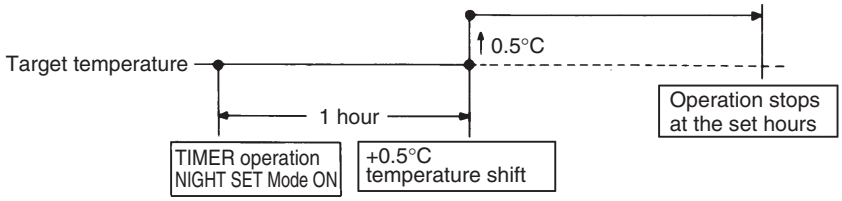
Outline

When the OFF timer is set, the NIGHT SET Mode is automatically activated. The NIGHT SET Mode keeps the airflow rate setting.

Detail

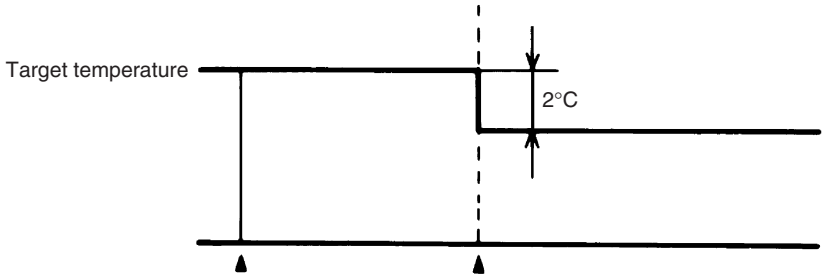
The NIGHT SET Mode continues operation at the target temperature for the first one hour, then automatically raises the target temperature slightly in the case of cooling, or lowers it slightly in the case of heating. This prevents excessive cooling in summer and excessive heating in winter to ensure comfortable sleeping conditions, and also conserves electricity.

Cooling



(R10870)

Heating / Radiant

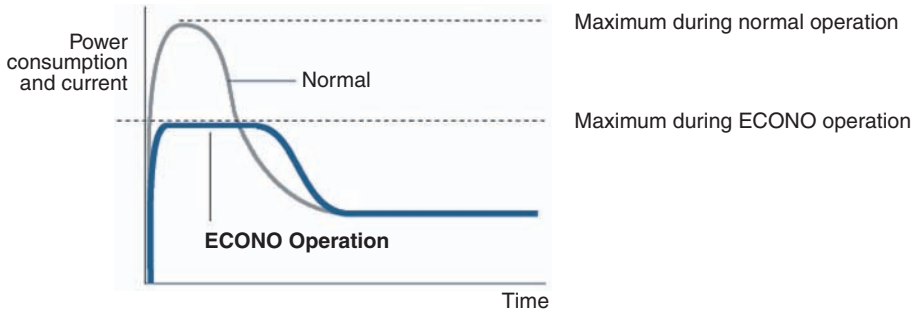


(R11813)

1.10 ECONO Operation

The "ECONO operation" reduces the maximum operating current and the power consumption. This operation is particularly convenient for energy-saving-oriented users. It is also a major bonus for those whose breaker capacities do not allow the use of multiple electrical devices and air conditioners.
It is easily activated from the wireless remote controller by pushing the [ECONO] button.

- When this function is activated, the maximum capacity also decreases.
- ECONO operation can only be set when the unit is running. Pressing the ON/OFF button on the remote controller cancels the function.
- ECONO operation is available when the unit is in AUTO, COOL, DRY, or HEAT operation and not available in RADIANT or FAN operation.
- ECONO operation and POWERFUL operation cannot be used at the same time. The latest command has the priority.



(R9288)

1.11 Inverter POWERFUL Operation

Outline

In order to exploit the cooling and heating capacity to full extent, operate the air conditioner by increasing the indoor fan rotating speed and the compressor frequency.

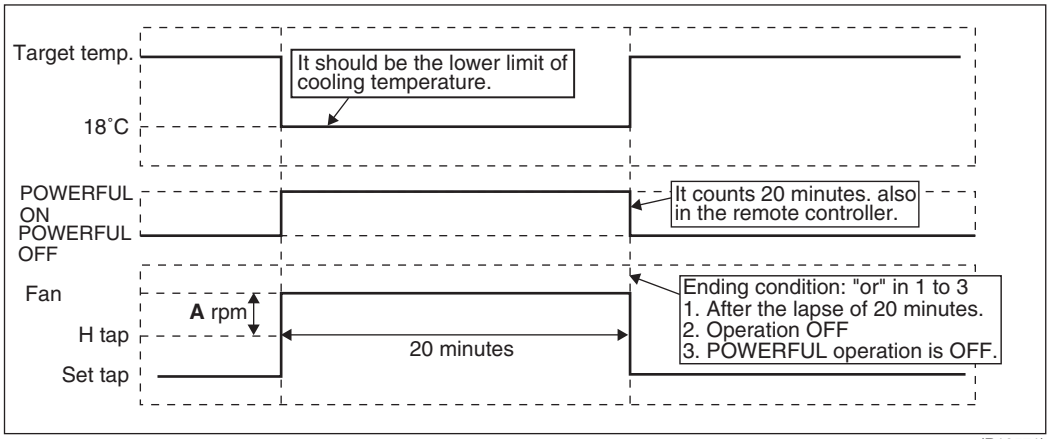
Detail

When the [POWERFUL] button is pressed, the fan speed and target temperature are converted to the following states for 20 minutes.

Operation mode	Fan speed	Target temperature
COOL	H tap + **A** rpm	18°C
DRY	Dry rotating speed + **A** rpm	Lowered by 2.5°C
HEAT / RADIANT 1	H tap + **A** rpm	32°C
FAN	H tap + **A** rpm	—
AUTO	Same as cooling / heating in POWERFUL operation	The target temperature is kept unchanged.

A = 50 rpm

Ex: POWERFUL operation in cooling



(R13571)

Note: POWERFUL operation is only available in RADIANT 1 (RADIANT operation with heating), it is not available in RADIANT 2 (RADIANT operation only).

1.12 Other Functions

1.12.1 Hot-Start Function

In order to prevent the cold air blast that normally comes when heating operation is started, the temperature of the indoor heat exchanger is detected, and either the airflow is stopped or is made very weak thereby carrying out comfortable heating of the room.
*The cold air blast is also prevented using a similar control when the defrosting operation is started or when the thermostat is turned ON.

1.12.2 Signal Receiving Sign

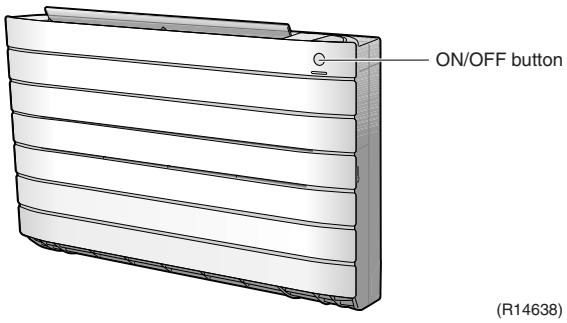
When the indoor unit receives a signal from the remote controller, the unit emits a signal receiving sound.

1.12.3 Indoor Unit ON/OFF Button

An [ON/OFF] button is provided on the display of the unit.

- Press this button once to start operation. Press once again to stop it.
- This button is useful when the remote controller is missing or the battery has run out.
- The operation mode refers to the following table.

Operation mode	Temperature setting	Airflow rate
AUTO	25ºC	Automatic



(R14638)

<Forced cooling operation>
Forced cooling operation can be started by pressing the [ON/OFF] button for 5 to 9 seconds while the unit is not operating.
Refer to page 221 for detail.

Note: When the [ON/OFF] button is pressed for 10 seconds or more, the forced cooling operation is stopped.

1.12.4 Titanium Apatite Photocatalytic Air-Purifying Filter

This filter combines the Air-Purifying Filter and Titanium Apatite Photocatalytic Deodorizing Filter as a single highly effective filter. The filter traps microscopic particles, decomposes odors and even deactivates bacteria and viruses. It lasts for 3 years without replacement if washed about once every 6 months.

1.12.5 Auto-restart Function

If a power failure (including one for just a moment) occurs during the operation, the operation restarts automatically when the power is restored in the same condition as before the power failure.

Note: It takes 3 minutes to restart the operation because the 3-minute standby function is activated.

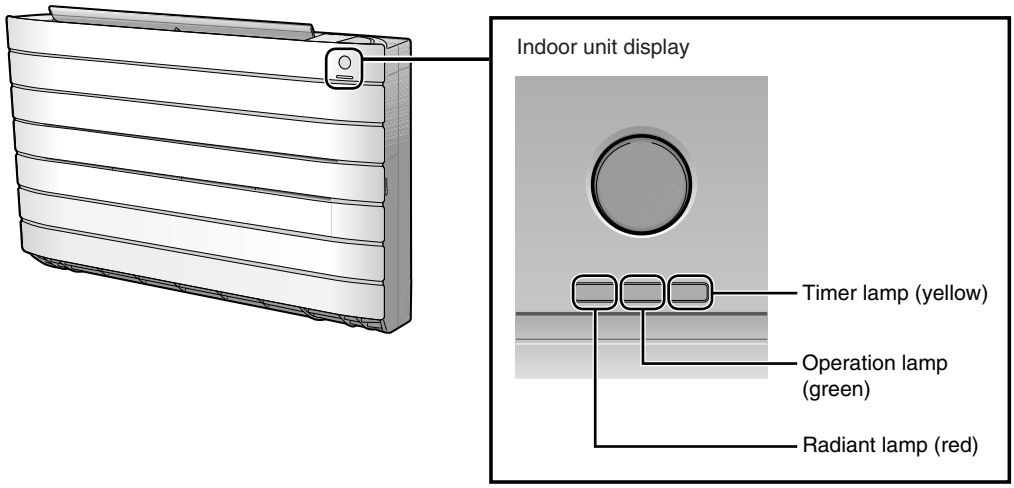
1.12.6 WEEKLY TIMER Operation

Up to 4 timer settings can be saved for each day of the week (up to 28 settings in total).
Those 3 items of “ON/OFF”, “temperature” and “time” can be set.

Refer to page 62 for detail.

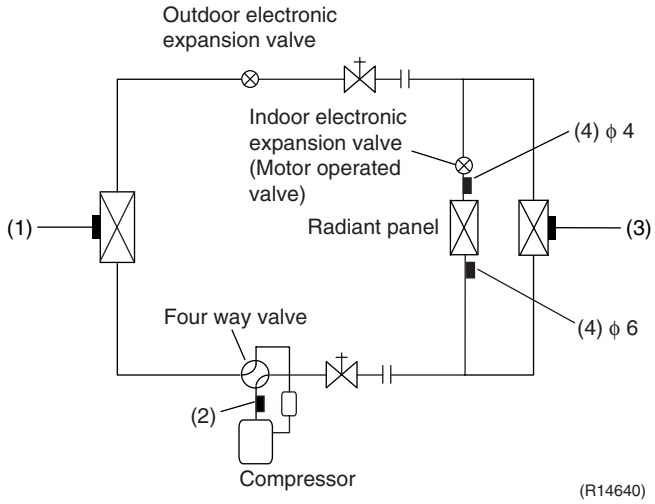
1.12.7 Brightness Setting of the Indoor Unit Display

Each time you press the [Brightness] button on the remote controller, the brightness of the indoor unit display changes to “high”, “low”, or “off”.
Refer to the operation manual for details.



(R14639)

2. Function of Thermistor



(1) Outdoor Heat Exchanger Thermistor

1. The outdoor heat exchanger thermistor is used for controlling target discharge pipe temperature. The system sets the target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the outdoor electronic expansion valve opening so that the target discharge pipe temperature can be obtained.
2. In cooling operation, the outdoor heat exchanger thermistor is used for detecting disconnection of the discharge pipe thermistor. When the discharge pipe temperature becomes lower than the outdoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.
3. In cooling operation, the outdoor heat exchanger thermistor is used for high pressure protection.

(2) Discharge Pipe Thermistor

1. The discharge pipe thermistor is used for controlling discharge pipe temperature. If the discharge pipe temperature (used in place of the inner temperature of the compressor) rises abnormally, the operating frequency becomes lower or the operation halts.
2. The discharge pipe thermistor is used for detecting disconnection of the discharge pipe thermistor.

(3) Indoor Heat Exchanger Thermistor

1. The indoor heat exchanger thermistor is used for controlling target discharge pipe temperature. The system sets the target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the outdoor electronic expansion valve opening so that the target discharge pipe temperature can be obtained.
2. In cooling operation, the indoor heat exchanger thermistor is used for freeze-up protection control. If the indoor heat exchanger temperature drops abnormally, the operating frequency becomes lower or the operation halts.
3. In heating operation, the indoor heat exchanger thermistor is used for detecting disconnection of the discharge pipe thermistor. When the discharge pipe temperature becomes lower than the indoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.

(4) Radiant Panel Thermistors

1. The radiant panel thermistors are used for calculating radiant panel surface temperature. Due to structural and manufactural restrictions, the radiant panel surface temperature cannot be controlled directly with a thermistor. Thermistors are mounted on the radiant panel piping in order to calculate the radiant panel surface temperature.
   The indoor electronic expansion valve is controlled according to the radiant panel surface temperature.
2. The radiant panel thermistors are used for detecting malfunction of the indoor electronic expansion valve.

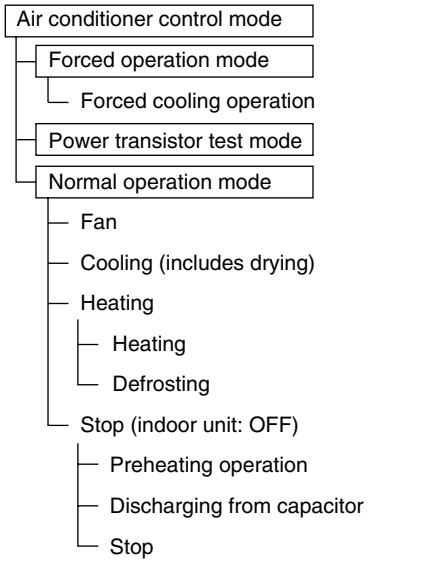
3. Control Specification

3.1 Mode Hierarchy

Outline

There are 3 modes; the one is the normal operation mode and the others are the forced operation mode and the power transistor test mode for installation and servicing.

Detail



(R14248)

Note: Unless specified otherwise, a dry operation command is regarded as cooling operation and a radiant operation command is regarded as heating operation.

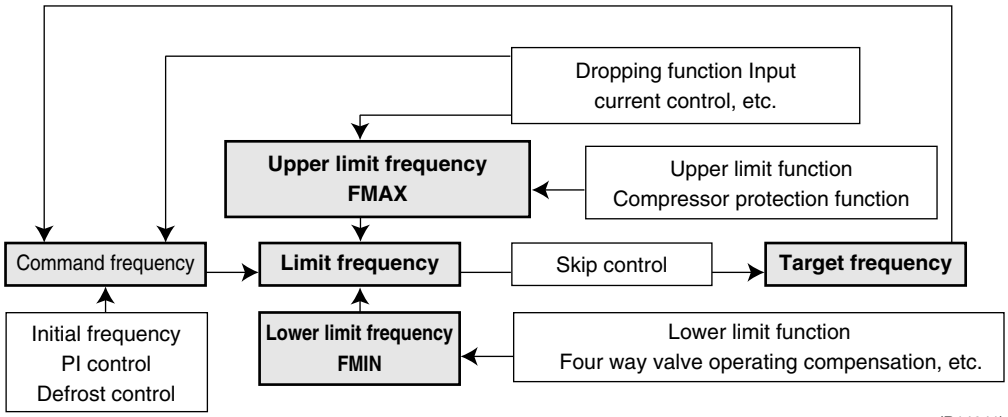
3.2 Frequency Control

Outline

Frequency is determined according to the difference between the room thermistor temperature and the target temperature.
The function is explained as follows.

1. How to determine frequency
2. Frequency command from the indoor unit (Difference between the room thermistor temperature and the target temperature)
3. Frequency initial setting
4. PI control

When the shift of the frequency is less than zero (ΔF<0) by PI control, the target frequency is used as the command frequency.



Detail

How to Determine Frequency
The compressor's frequency is determined by taking the following steps.

1. Determine command frequency

- Command frequency is determined in the following order of priority.

1. Limiting defrost control time
2. Forced cooling
3. Indoor frequency command

2. Determine upper limit frequency

- The minimum value is set as an upper limit frequency among the frequency upper limits of the following functions:
  Compressor protection, input current, discharge pipe temperature, heating peak-cut, freeze-up protection, defrost.

3. Determine lower limit frequency

- The maximum value is set as an lower limit frequency among the frequency lower limits of the following functions:
  Four way valve operation compensation, draft prevention, pressure difference upkeep.

4. Determine prohibited frequency

- There is a certain prohibited frequency such as a power supply frequency.

Indoor Frequency Command (ΔD signal)

The difference between the room thermistor temperature and the target temperature is taken as the "ΔD signal" and is used for frequency command.

Temperature difference	ΔD signal	Temperature difference	ΔD signal	Temperature difference	ΔD signal	Temperature difference	ΔD signal
–2.0	∗Th OFF	0	4	2.0	8	4.0	C
–1.5	1	0.5	5	2.5	9	4.5	D
–1.0	2	1.0	6	3.0	A	5.0	E
–0.5	3	1.5	7	3.5	B	5.5	F

∗Th OFF = Thermostat OFF

Frequency Initial Setting

<Outline>

When starting the compressor, the frequency is initialized according to the ΔD value and the Q value of the indoor unit.

Q value: Indoor unit output determined from indoor unit volume, airflow rate and other factors.

PI Control (Determine Frequency Up / Down by ΔD Signal)

1. **P control**

   The ΔD value is calculated in each sampling time (15 ~ 20 seconds), and the frequency is adjusted according to its difference from the frequency previously calculated.

2. **I control**

   If the operating frequency does not change for more than a certain fixed time, the frequency is adjusted according to the ΔD value.
   When the ΔD value is low, the frequency is lowered.
   When the ΔD value is high, the frequency is increased.

3. **Frequency management when other controls are functioning**

- When frequency is dropping;
  Frequency management is carried out only when the frequency drops.
- For limiting lower limit
  Frequency management is carried out only when the frequency rises.

4. **Upper and lower limit of frequency by PI control**

   The frequency upper and lower limits are set according to the command on indoor unit.
   When the indoor or outdoor unit quiet operation command comes from the indoor unit, the upper limit frequency is lower than the usual setting.

3.3 Controls at Mode Changing / Start-up

3.3.1 Preheating Operation

Outline

The inverter operation in open phase starts with the conditions of the preheating command from the indoor unit, the outdoor temperature, and the discharge pipe temperature.

Detail

■ **25/35 Class**

Outdoor temperature ≥ 7°C → Control A
Outdoor temperature < 7°C → Control B

Control A

- ON condition
  Discharge pipe temperature < 10°C
- OFF condition
  Discharge pipe temperature > 12°C
  Radiation fin temperature ≥ 90°C

Control B

- ON condition
  Discharge pipe temperature < 20°C
- OFF condition
  Discharge pipe temperature > 22°C
  Radiation fin temperature ≥ 90°C

■ **50 Class**

Outdoor temperature ≥ 10°C → Control A
Outdoor temperature < 10°C → Control B

Control A

- ON condition
  Discharge pipe temperature < 6°C
- OFF condition
  Discharge pipe temperature > 8°C
  Radiation fin temperature ≥ 90°C

Control B

- ON condition
  Discharge pipe temperature < 10.5°C
- OFF condition
  Discharge pipe temperature > 12°C
  Radiation fin temperature ≥ 90°C

3.3.2 Four Way Valve Switching

Outline

In heating operation, current is conducted, and in cooling and defrosting, current is not conducted. In order to eliminate the switching sound as the four way valve coil switches from ON to OFF when the heating is stopped, the OFF delay switch of the four way valve is carried out after the operation stopped.

Detail

OFF delay switch of four way valve:
The four way valve coil is energized for 150 ~ 160 seconds after the operation is stopped.

3.3.3 Four Way Valve Operation Compensation

Outline

At the beginning of the operation as the four way valve is switched, the pressure difference to activate the four way valve is acquired by having output frequency which is more than a certain fixed frequency, for a certain fixed time.

Detail

Starting Conditions

1. When starting compressor for heating
2. When the operation mode changes from heating to cooling
3. When starting compressor for defrosting
4. When starting compressor for heating after defrosting
5. When starting compressor for the first time after resetting with the power ON
6. When starting compressor after the fault of switching over cooling / heating

The lower limit of frequency keeps **A** Hz for **B** seconds with any conditions 1 through 6 above.

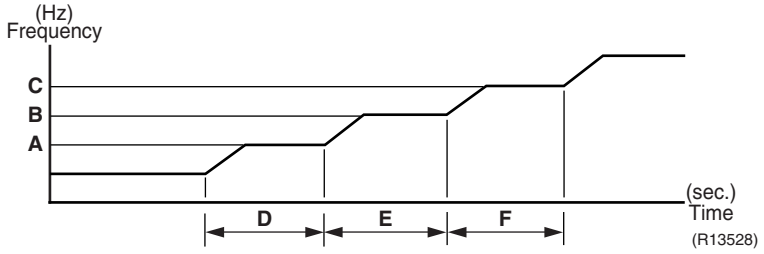
	25/35 class		50 class	
	Cooling	Heating	Cooling	Heating
A (Hz)	68	66	48	48
B (seconds)	45		70	

3.3.4 3-minute Standby

Turning on the compressor is prohibited for 3 minutes after turning it off.
(Except when defrosting.)

3.3.5 Compressor Protection Function

When turning the compressor from OFF to ON, the upper limit of frequency is set as follows.
(The function is not activated when defrosting.)



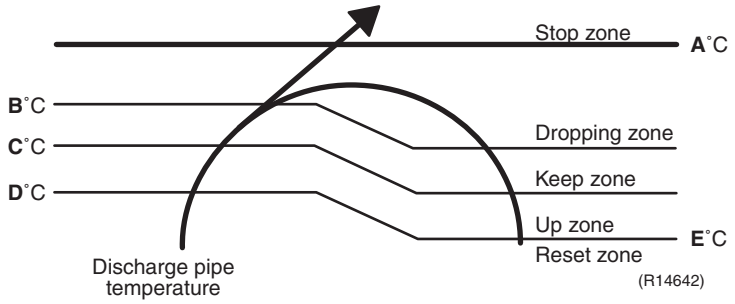
	25/35 class	50 class
A (Hz)	48	55
B (Hz)	64	70
C (Hz)	88	85
D (seconds)	240	120
E (seconds)	360	200
F (seconds)	180	470

3.4 Discharge Pipe Temperature Control

Outline

The discharge pipe temperature is used as the internal temperature of the compressor. If the discharge pipe temperature rises above a certain level, the upper limit of frequency is set to keep this temperature from rising further.

Detail



Zone	Control
Stop zone	When the temperature reaches the stop zone, the compressor stops.
Dropping zone	The upper limit of frequency decreases.
Keep zone	The upper limit of frequency is kept.
Up zone	The upper limit of frequency increases.
Reset zone	The upper limit of frequency is canceled.

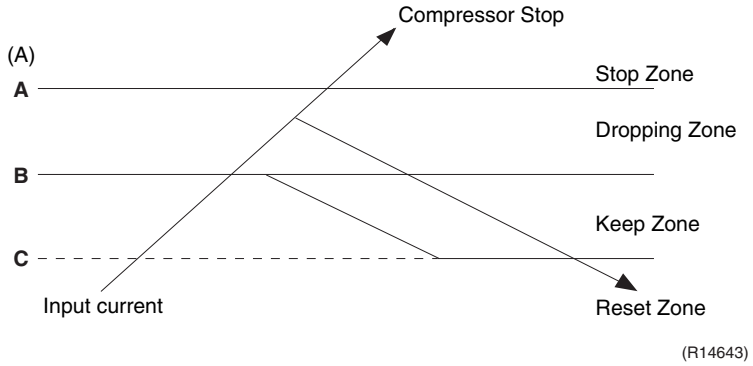
	25/35 class	50 class
A (°C)	110	110
B (°C)	105	103
C (°C)	101	101.5
D (°C)	99	100
E (°C)	97	95

3.5 Input Current Control

Outline

The microcomputer calculates the input current while the compressor is running, and sets the frequency upper limit from the input current.
In case of heat pump model, this control which is the upper limit control of the frequency takes priority over the lower limit of control of four way valve operation compensation.

Detail



Frequency control in each zone

Stop zone

- After 2.5 seconds in this zone, the compressor is stopped.

Dropping zone

- The upper limit of the compressor frequency is defined as operation frequency – 2 Hz.
- After this, the output frequency is pulled down by 2 Hz every second until it reaches the keep zone.

Keep zone

- The present maximum frequency goes on.

Reset zone

- Limit of the frequency is canceled.

	25 class		35 class		50 class	
	Cooling	Heating	Cooling	Heating	Cooling	Heating
A (A)	9.25		9.25		20.0	
B (A)	6.25	7.5	8.25		10.0	15.0
C (A)	5.5	6.75	7.5		9.0	14.0

Limitation of current dropping and stop value according to the outdoor temperature

- The current drops when outdoor temperature becomes higher than a certain level (depending on the model).

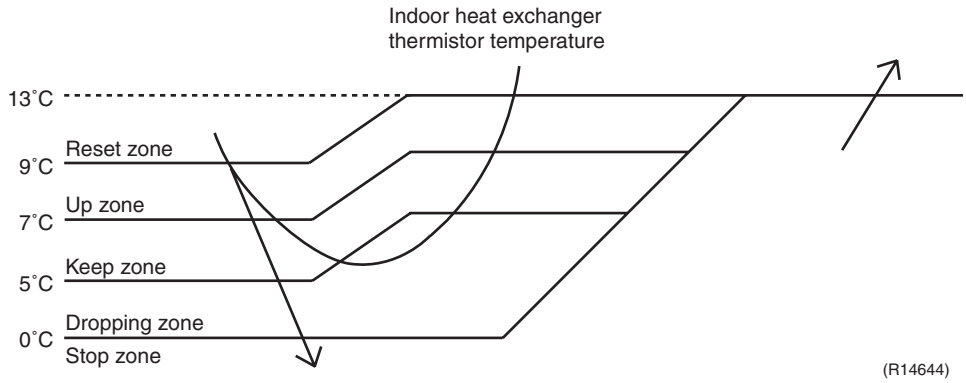
3.6 Freeze-up Protection Control

Outline

During cooling operation, the signal sent from the indoor unit controls the operating frequency limitation and prevents freezing of the indoor heat exchanger. (The signal from the indoor unit is divided into zones.)

Detail

The operating frequency limitation is judged with the indoor heat exchanger temperature.

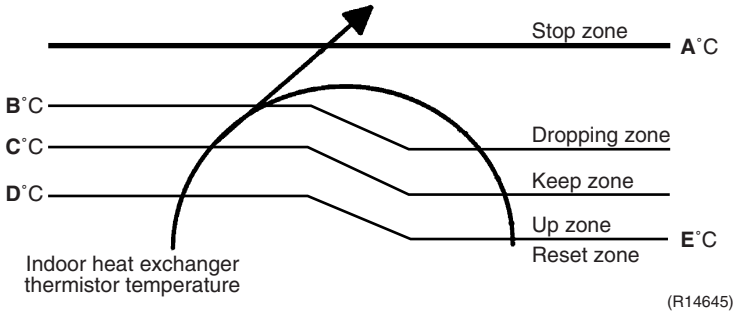


3.7 Heating Peak-cut Control

Outline

During heating operation, the indoor heat exchanger temperature determines the frequency upper limit to prevent abnormal high pressure.

Detail



Zone	Control
Stop zone	When the temperature reaches the stop zone, the compressor stops.
Dropping zone	The upper limit of frequency decreases.
Keep zone	The upper limit of frequency is kept.
Up zone	The upper limit of frequency increases.
Reset zone	The upper limit of frequency is canceled.

	25/35 class	50 class
A (°C)	65	65
B (°C)	56	56
C (°C)	53	55
D (°C)	51	53
E (°C)	46	51

3.8 Outdoor Fan Control

1. Fan ON control to cool down the electrical box
The outdoor fan is turned ON when the electrical box temperature is high while the compressor is OFF.

2. Fan OFF control while defrosting
The outdoor fan is turned OFF while defrosting.

3. Fan OFF delay when stopped
The outdoor fan is turned OFF 60 seconds after the compressor stops.

4. Fan speed control for pressure difference upkeep
The rotation speed of the outdoor fan is controlled for keeping the pressure difference while cooling with low outdoor temperature.
- When the pressure difference is low, the rotation speed of the outdoor fan is reduced.
- When the pressure difference is high, the rotation speed of the outdoor fan is controlled as well as normal operation.

5. Fan control while forced cooling operation
The outdoor fan is controlled as well as normal operation while the forced cooling operation.

6. Fan speed control for POWERFUL operation
The rotation speed of the outdoor fan is increased while the POWERFUL operation.

7. Fan speed control while indoor / outdoor unit quiet operation
The rotation speed of the outdoor fan is reduced by the command of the indoor / outdoor unit quiet operation.

8. Fan ON/OFF control when operation starts / stops
The outdoor fan is turned ON when the operation starts. The outdoor fan is turned OFF when the operation stops.

3.9 Liquid Compression Protection Function

Outline

In order to obtain the dependability of the compressor, the compressor is stopped according to the outdoor temperature and temperature of the outdoor heat exchanger.

Detail

■ Operation stops depending on the outdoor temperature
In cooling operation, when the outdoor temperature is below a certain level, the compressor turns off.

3.10 Defrost Control

Outline

Defrosting is carried out by the cooling cycle (reverse cycle). The defrosting time or outdoor heat exchanger temperature must be more than a certain value to finish.

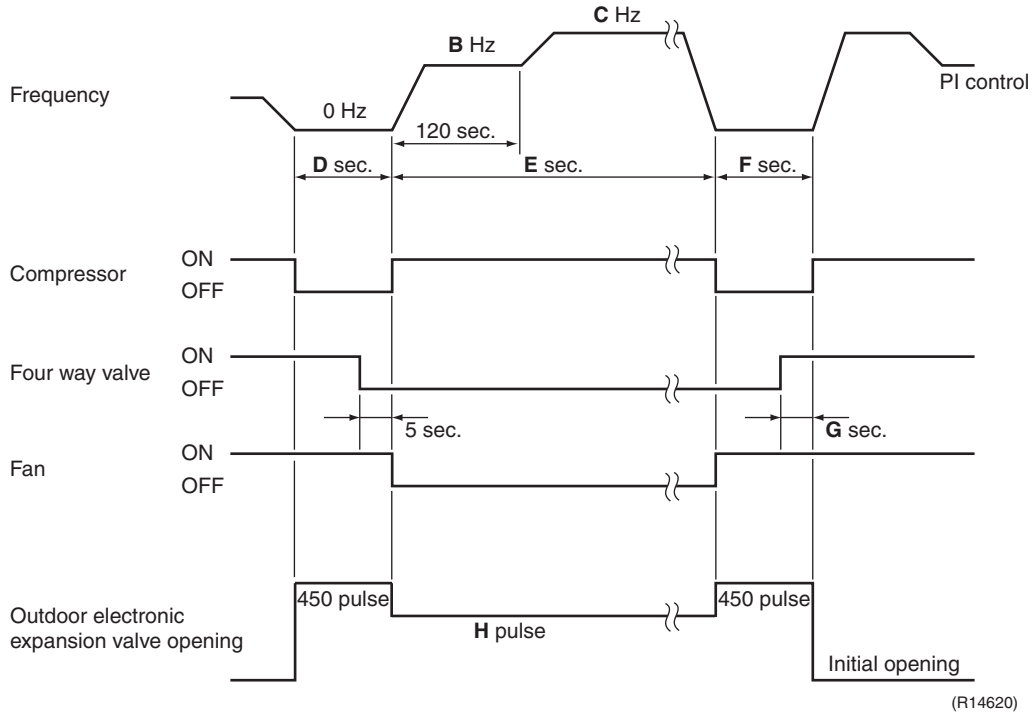
Detail

Conditions for Starting Defrost

- The starting conditions is determined with the outdoor temperature and the outdoor heat exchanger temperature.
- The system is in heating operation.
- The compressor operates for 6 minutes.
- More than **A** minutes of accumulated time pass since the start of the operation, or ending the previous defrosting.

Conditions for Canceling Defrost

The judgment is made with outdoor heat exchanger temperature. (**J**°C)



	25/35 class	50 class
A (minutes)	28	44
B (Hz)	76	55
C (Hz)	86	90
D (seconds)	50	60
E (seconds)	480	340
F (seconds)	60	50
G (seconds)	5	15
H (pulse)	350	450
J (°C)	4 ~18	4 ~12

3.11 Outdoor Electronic Expansion Valve Control

Outline

The following items are included in the outdoor electronic expansion valve control.

Outdoor electronic expansion valve is fully closed.

1. Outdoor electronic expansion valve is fully closed when turning on the power.
2. Pressure equalizing control

Open Control

1. Outdoor electronic expansion valve control when starting operation
2. Outdoor electronic expansion valve control when the frequency changes
3. Outdoor electronic expansion valve control for defrosting
4. Outdoor electronic expansion valve control when the discharge pipe temperature is abnormally high
5. Outdoor electronic expansion valve control when the discharge pipe thermistor is disconnected

Feedback Control

1. Target discharge pipe temperature control

Detail

The followings are the examples of control which function in each operation mode by the outdoor electronic expansion valve control.

● : Holding Functions – : No Functions	When the power turns on or when the compressor stops	When the operation starts	When the frequency changes under starting control	During target discharge pipe temperature control	When the frequency changes under target discharge pipe temperature control	When the disconnection of the discharge pipe thermistor is ascertained	When the frequency changes under the control for disconnection of the discharge pipe thermistor	Under defrost control
Cooling								
Starting control	–	●	–	–	–	–	–	–
Control when the frequency changes	–	–	●	–	●	–	–	–
Target discharge pipe temperature control	–	–	–	●	–	–	–	–
Control for disconnection of the discharge pipe thermistor	–	–	–	–	–	●	●	–
High discharge pipe temperature control	–	●	●	●	●	–	–	–
Pressure equalizing control	●	–	–	–	–	–	–	–
Opening limit control	–	●	●	●	●	●	●	–
Heating								
Starting control	–	●	–	–	–	–	–	–
Control when the frequency changes	–	–	●	–	●	–	–	–
Target discharge pipe temperature control	–	–	–	●	–	–	–	–
Control for disconnection of the discharge pipe thermistor	–	–	–	–	–	●	●	–
High discharge pipe temperature control	–	●	●	●	●	–	–	–
Defrost control	–	–	–	–	–	–	–	●
Pressure equalizing control	●	–	–	–	–	–	–	–
Opening limit control	–	●	●	●	●	●	●	–

3.11.1 Fully Closing with Power ON

The outdoor electronic expansion valve is initialized when turning on the power. The opening position is set and the pressure equalization is developed.

3.11.2 Pressure Equalizing Control

When the compressor is stopped, the pressure equalization control is activated. The outdoor electronic expansion valve opens, and develops the pressure equalization.

3.11.3 Opening Limit Control

Outline

A maximum and minimum opening of the outdoor electronic expansion valve are limited.

Detail

	25/35 class	50 class
Maximum opening (pulse)	480	480
Minimum opening (pulse)	52	54

The outdoor electronic expansion valve is fully closed when cooling operation stops, and is opened at fixed degree during defrosting.

3.11.4 Starting Operation Control

The outdoor electronic expansion valve opening is controlled when the operation starts, and prevents the superheating or liquid compression.

3.11.5 Control when the frequency changes

When the target discharge pipe temperature control is active, if the target frequency is changed for a specified value in a certain time period, the target discharge pipe temperature control is canceled and the target opening of the outdoor electronic expansion valve is changed according to the shift.

3.11.6 High Discharge Pipe Temperature

When the compressor is operating, if the discharge pipe temperature exceeds a certain value, the outdoor electronic expansion valve opens and the refrigerant runs to the low pressure side. This procedure lowers the discharge pipe temperature.

3.11.7 Control for Disconnection of the Discharge Pipe Thermistor

Outline

The disconnection of the discharge pipe thermistor is detected by comparing the discharge pipe temperature with the condensing temperature. If the discharge pipe thermistor is disconnected, the outdoor electronic expansion valve opens according to the outdoor temperature and the operation frequency, and operates for a specified time, and then stops.
After 3 minutes of waiting, the operation restarts and checks if the discharge pipe thermistor is disconnected. If the discharge pipe thermistor is disconnected, the system stops after operating for a specified time.
If the disconnection is detected repeatedly, the system is shut down. When the compressor runs for 60 minutes without any error, the error counter is reset.

Detail

When the starting control (cooling : **A** seconds, heating : **B** seconds) finishes, the detection timer for disconnection of the discharge pipe thermistor (**C** seconds) starts. When the timer is over, the following adjustment is made.

1. When the operation mode is cooling
   When the following condition is fulfilled, the discharge pipe thermistor disconnection is ascertained.
   Discharge pipe temperature + 6°C < outdoor heat exchanger temperature
2. When the operation mode is heating
   When the following condition is fulfilled, the discharge pipe thermistor disconnection is ascertained.
   Discharge pipe temperature + 6°C < indoor heat exchanger temperature

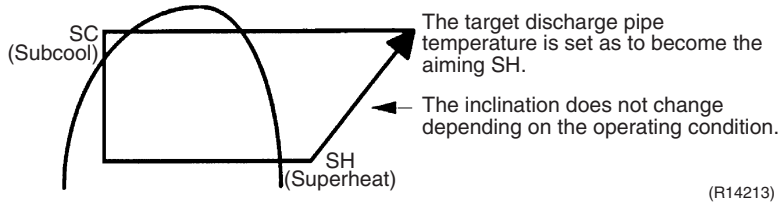
	25/35 class	50 class
A (seconds)	10	10
B (seconds)	120	30
C (seconds)	810	630

Adjustment when the thermistor is disconnected

When the disconnection is ascertained, the compressor continues operation for 9 minutes and then stops.
When the compressor stops repeatedly, the system is shut down.

3.11.8 Target Discharge Pipe Temperature Control

The target discharge pipe temperature is obtained from the indoor and outdoor heat exchanger temperature, and the outdoor electronic expansion valve opening is adjusted so that the actual discharge pipe temperature becomes close to the target discharge pipe temperature. (Indirect SH (superheating) control using the discharge pipe temperature)


SC
(Subcool)
The target discharge pipe temperature is set as to become the aiming SH.
The inclination does not change depending on the operating condition.
SH
(Superheat)
(R14213)

The outdoor electronic expansion valve opening and the target discharge pipe temperature are adjusted every 20 seconds. The target discharge pipe temperature is controlled by indoor heat exchanger temperature and outdoor heat exchanger temperature. The opening degree of the outdoor electronic expansion valve is controlled by followings.

- Target discharge pipe temperature
- Actual discharge pipe temperature
- Previous discharge pipe temperature

3.12 Malfunctions

3.12.1 Detection of Overcurrent and Overload

Outline

An excessive output current is detected and the OL temperature is observed to protect the compressor.

Detail

- If the OL (compressor head) temperature exceeds 120 ~ 130°C, the system shuts down the compressor.
- If the inverter current exceeds 9.25 ~ 20 A (depending on the model), the system shuts down the compressor.

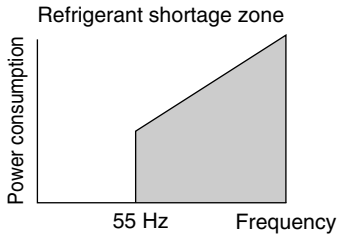
3.12.2 Refrigerant Shortage Control

Outline

I: Detecting by power consumption

If the power consumption is below the specified value and the frequency is higher than the specified frequency, it is regarded as refrigerant shortage.

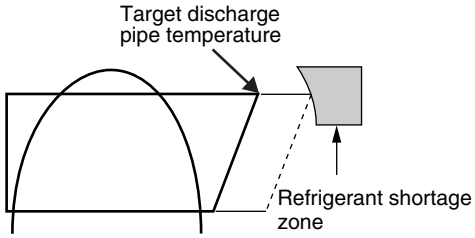
The power consumption is low comparing with that in the normal operation when refrigerant is insufficient, and refrigerant shortage is detected by checking power consumption.



(R14621)

II: Detecting by discharge pipe temperature

If the discharge pipe temperature is higher than the target discharge pipe temperature, and the outdoor electronic expansion valve is fully open for more than the specified time, it is regarded as refrigerant shortage.



(R1391)

III: Detecting by the difference of temperature

If the difference between suction and discharge temperature is smaller than the specified value, it is regarded as refrigerant shortage.

Refer to page 115 for detail.

Part 5
Operation Manual

1. System Configuration 45
2. Operation Manual 46
   2.1 Names of Parts 46
   2.2 Preparation before Operation 50
   2.3 AUTO · DRY · COOL · HEAT · FAN Operation 52
   2.4 RADIANT Operation 53
   2.5 Temperature Setting 54
   2.6 Adjusting the Airflow Direction and Rate 55
   2.7 POWERFUL Operation 57
   2.8 OUTDOOR UNIT QUIET Operation 58
   2.9 ECONO Operation 59
   2.10 OFF TIMER Operation 60
   2.11 ON TIMER Operation 61
   2.12 WEEKLY TIMER Operation 62
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1. System Configuration

After installation and trial operation of the room air conditioner are completed, the air conditioner should be handled and operated as described in the following pages. Every user should be informed on the correct method of operation and how to check if it can cool (or heat) well, and how to use it efficiently.

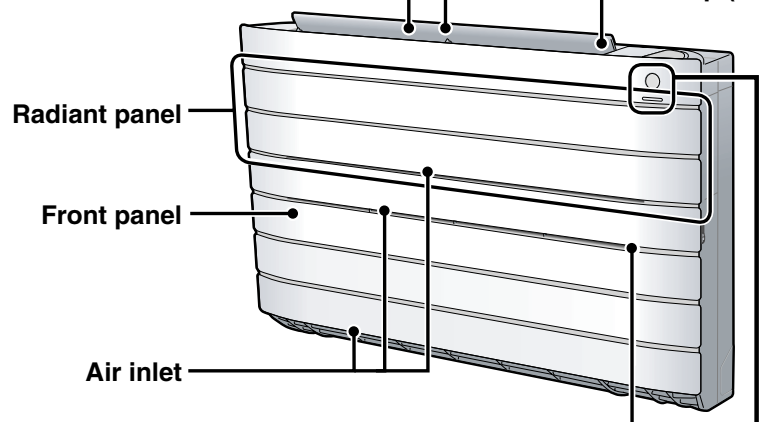
Providing instructions to the user can reduce requests for servicing by 80%. However proficient the installation and operating functions of the air conditioning system are, the customer may fault either the room air conditioner or its installation work when it is actually due to improper handling. The installation work and the handing-over of the unit can only be considered completed when its handling has been fully explained to the user without using technical terms, and while imparting full knowledge of the equipment.

2. Operation Manual

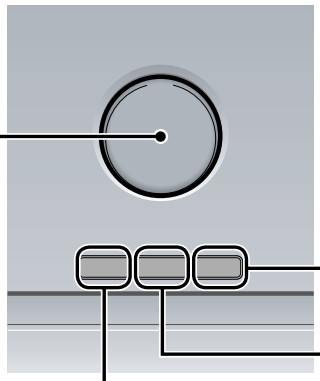
2.1 Names of Parts

Name of Parts

Indoor Unit


Louvers (vertical blades)
• The louvers are inside of the air outlet. Page 14
Air outlet
Flap (horizontal blade) Page 14
Radiant panel
Front panel
Air inlet
Room temperature sensor
• It detects the air temperature around the unit.

Display



Signal receiver

- It receives signals from the remote controller.
- When the unit receives a signal, you will hear a beep sound.

Case	Sound type
Operation start	beep-beep
Setting changed	beep
Operation stop	long beep

Indoor unit ON/OFF switch

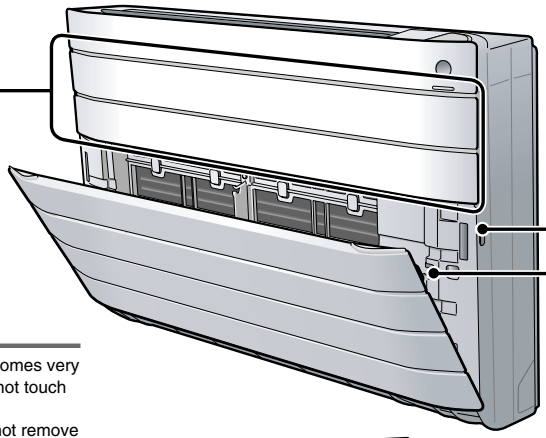
- Press this switch once to start operation. Press once again to stop it.
- The operation mode refer to the following table.

Mode	Temperature setting	Airflow rate
AUTO	25˚C	AUTO

- This switch is useful when the remote controller is missing.

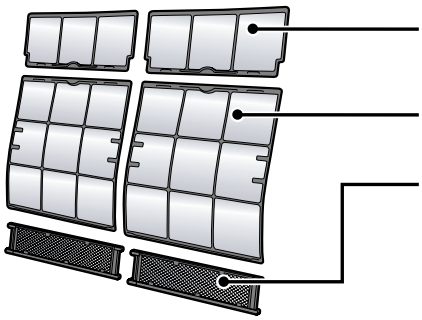
5

■ Open the front panel



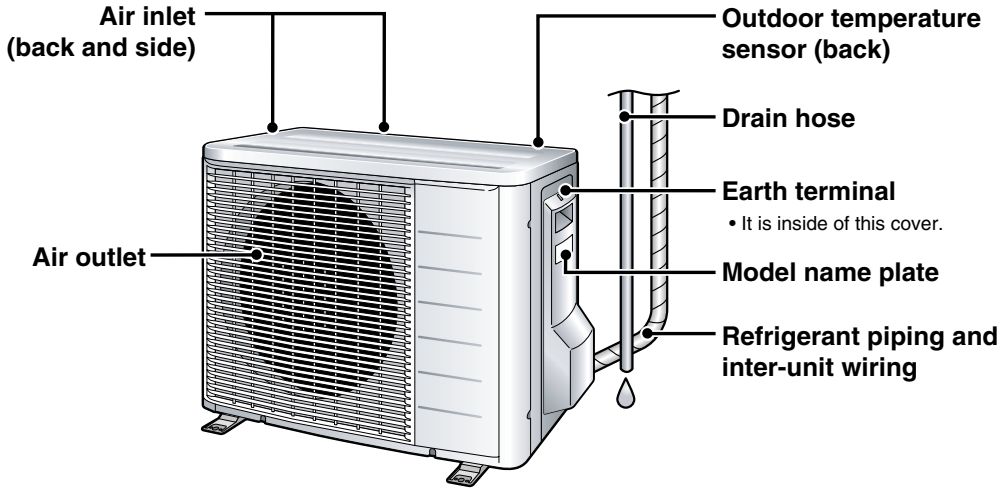
⚠ CAUTION

- The surface of the radiant panel becomes very hot during RADIANT operation. Do not touch the panel of the main unit directly.
  After the operation is complete, do not remove or care and clean the panel until the surface temperature of the panel decreases.


Air filter (upper)
Air filter (lower)
Titanium apatite photocatalytic air-purifying filter
• It is inside of air filter (lower).

Outdoor Unit

- Appearance of the outdoor unit may differ from some models.

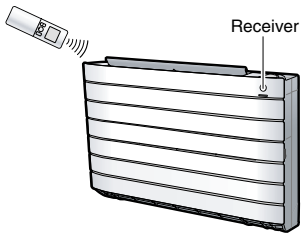


6

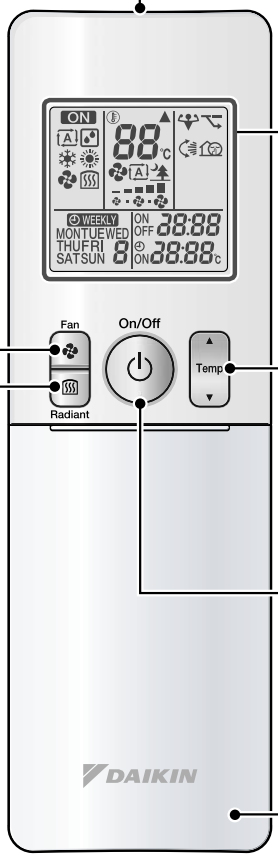
Name of Parts

Remote Controller

Signal transmitter



- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- Do not drop the remote controller. Do not get it wet.
- The maximum distance for communication is approximately 7m.



Display (LCD)

- It displays the current settings. (In this illustration, each section is shown with its displays on for the purpose of explanation.)

TEMPERATURE adjustment buttons

- It changes the temperature setting. ▶Page 13

ON/OFF button

- Press this button once to start operation. Press once again to stop it. ▶Page 11

FAN setting button

- It selects the airflow rate setting. ▶Page 15

RADIANT switching button

- RADIANT operation. ▶Page 12

Front cover

- Open the front cover. ▶Page 8

Model	ARC466A2

7

■ Open the front cover

MODE selector button
• It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN) ▶Page 11

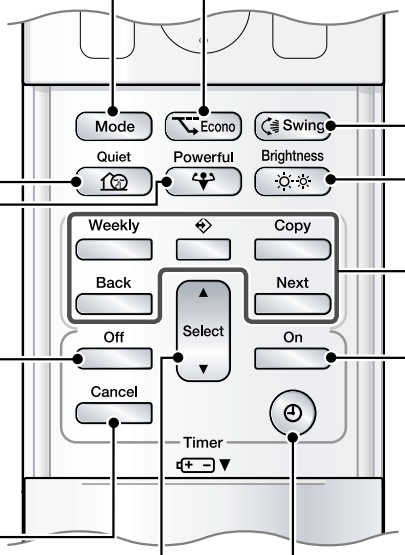
ECONO button
• ECONO operation. ▶Page 18

SWING button
• Adjusting the airflow direction. ▶Page 14

QUIET button
• OUTDOOR UNIT QUIET operation. ▶Page 17

Lamp brightness setting button ▶Page 9

POWERFUL button
• POWERFUL operation. ▶Page 16



Weekly : **WEEKLY button**
: **PROGRAM button**
Copy : **COPY button**
Back : **BACK button**
Next : **NEXT button**
• WEEKLY TIMER operation. ▶Page 21

OFF TIMER button ▶Page 19

ON TIMER button ▶Page 20

TIMER CANCEL button
• It cancels the timer setting. ▶Page 19, 20
• It cannot be used for the WEEKLY TIMER operation.

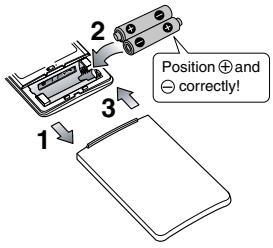
SELECT button
• It changes the ON/OFF TIMER and WEEKLY TIMER settings. ▶Page 19, 20, 21

CLOCK button ▶Page 10

8

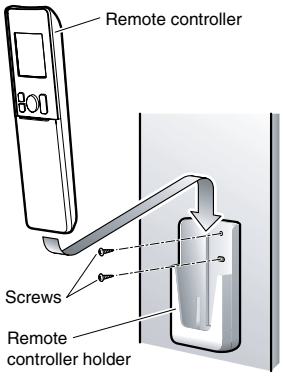
2.2 Preparation before Operation

Preparation before Operation



■ To set the batteries

1. **Slide the front cover to take it off.**
2. **Set two dry batteries AAA.LR03 (alkaline).**
3. **Set the front cover as before.**



■ To fix the remote controller holder on the wall

1. **Choose a place from where the signals reach the unit.**
2. **Fix the holder to a wall, a pillar, or similar location with the screws procured locally.**
3. **Place the remote controller in the remote controller holder.**

■ To set the luminance of the display

• The luminance of the indoor unit display can be set.

Press Brightness ☼☼ .

→ Hi ⟶ Low ⟶ Off →

NOTE

■ **Notes on batteries**
- When replacing the batteries, use batteries of the same type, and replace both old batteries together.
- When the system is not used for a long time, take the batteries out.
- The batteries will last for approximately 1 year. If the remote controller display begins to fade and the degradation of reception performance occurs within a year, however, replace both batteries with new, size AAA.LR03 (alkaline).
- The attached batteries are provided for the initial use of the system. The usable period of the batteries may be short depending on the manufactured date of the air conditioner.

■ **Notes on remote controller**
- Never expose the remote controller to direct sunlight.
- Dust on the signal transmitter or receiver will reduce the sensitivity. Wipe off dust with soft cloth.
- Signal communication may be disabled if an electronic-starter-type fluorescent lamp (such as inverter-type lamps) is in the room. Consult the shop if that is the case.
- If the remote controller signals happen to operate another appliance, move that appliance to somewhere else, or consult the service shop.

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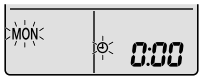
■ Turn the breaker on

• After the power is turned on, the flap of the indoor unit opens and closes once to set the reference position.

■ To set the clock

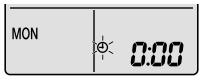
1. **Press** ⏲ **.**



• " 0:00 " is displayed on the LCD.
• " MON " and " ⏲ " blink.

2. **Press** Select **to set the current day of the week.**

3. **Press** ⏲ **.**



• " ⏲ " blinks.

4. **Press** Select **to set the clock to the present time.**

• Holding down ▲ or ▼ rapidly increases or decreases the time display.

5. **Press** ⏲ **.**

• Point the remote controller at the indoor unit when pressing the buttons.

• " : " blinks.

NOTE

■ Note on setting the clock

• If the indoor unit's internal clock is not set to the correct time, the ON TIMER, OFF TIMER and WEEKLY TIMER will not operate punctually.

2.3 AUTO · DRY · COOL · HEAT · FAN Operation

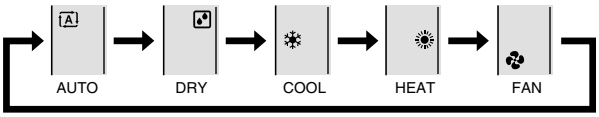
AUTO · DRY · COOL · HEAT · FAN Operation

The air conditioner operates with the operation mode of your choice.
From the next time on, the air conditioner will operate with the same operation mode.

■To start operation

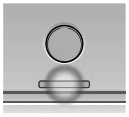
1. Press Mode and select an operation mode.

• Each pressing of the button advances the mode setting in sequence.



2. Press On/Off .

• " ON " is displayed on the LCD.
• The OPERATION lamp lights green.



Display

■To stop operation

Press On/Off again.

• " ON " disappears from the LCD.
• The OPERATION lamp goes off.

NOTE

MODE	Notes on each operation mode
HEAT	• Since this air conditioner heats the room by taking heat from outdoor air to indoors, the heating capacity becomes smaller in lower outdoor temperatures. If the heating effect is insufficient, it is recommended to use another heating appliance in combination with the air conditioner. • The heat pump system heats the room by circulating hot air around all parts of the room. After the start of HEAT operation, it takes some time before the room gets warmer. • In HEAT operation, frost may occur on the outdoor unit and lower the heating capacity. In that case, the system switches into defrosting operation to take away the frost. • During defrosting operation, hot air does not flow out of indoor unit.
COOL	• This air conditioner cools the room by releasing the heat in the room outside. Therefore, the cooling performance of the air conditioner may be degraded if the outdoor temperature is high. • When the outdoor temperature is lower than 10˚C, do not use COOL operation. If the operation is used when the outdoor temperature is lower than 10˚C, the protective function of the main unit works and this disables the operation.
DRY	• The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and airflow rate, so manual adjustment of these functions is unavailable.
AUTO	• In AUTO operation, the system selects an appropriate operation mode (COOL or HEAT) based on the room and outside temperatures and starts the operation. • The system automatically reselects setting at a regular interval to bring the room temperature to user-setting level.
FAN	• This mode is valid for fan only.

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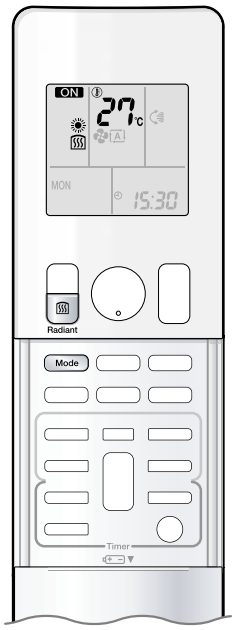
2.4 RADIANT Operation

RADIANT Operation

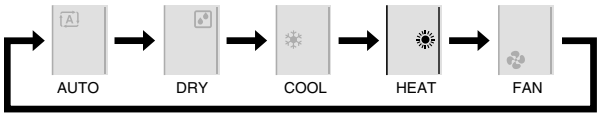


The RADIANT operation provides a comfortable environment with quiet and currentless heating operation in addition to the HEAT operation mode. The RADIANT operation has 2 operation modes.

■To start RADIANT operation

1. Press Mode and select an HEAT operation.

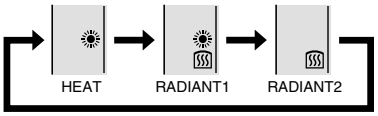
- Each pressing of the button advances the mode setting in sequence.

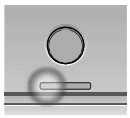


- "☀" is displayed on the LCD.

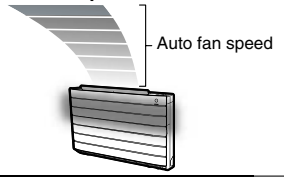
2. Press Radiant and select a RADIANT operation.

- "♨" is displayed on the LCD.
- The RADIANT lamp lights red.
- This button can be used only in the HEAT operation mode.
- When the RADIANT operation starts, the temperature of the radiant panel increases.




Display

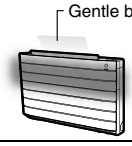
RADIANT operation with HEAT



■RADIANT1

- Use this operation when the difference between the set temperature and indoor temperature is large, or to warm up the room quickly.

RADIANT operation



■RADIANT2

- Use this operation to prioritize quiet and currentless heating operation, or when the noise from RADIANT1 operation bothers you. The gentle breeze operation starts from the beginning.

⚠ CAUTION

- During the RADIANT operation, the surface temperature of the panel will be about 55˚C at maximum. Even after the RADIANT operation is finished, the surface temperature of the panel of the air conditioner stays hot for a while. Do not touch the air conditioner until the surface temperature of the panel decreases. Be careful that children do not touch the surface of the panel.

NOTE

■Notes on RADIANT operation

- If RADIANT2 operation does not warm up the room, use HEAT or RADIANT1 operation.
- RADIANT1 can be used with POWERFUL operation. RADIANT2 cannot be used with the POWERFUL operation.
- This operation may not warm up the room adequately depending on conditions such as an extremely low outside temperature and lack of adequate performance.
- The RADIANT operation uses the auto fan speed, so the airflow rate cannot be changed.

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2.5 Temperature Setting

Temperature Setting

■To change the temperature setting

Press Temp **.**

• The displayed items on the LCD will change whenever either one of the buttons is pressed.

COOL operation	HEAT or RADIANT operation	AUTO operation	DRY or FAN operation
18-32˚C	10-30˚C	18-30˚C	The temperature setting is not variable.
Press ▲ to raise the temperature and press ▼ to lower the temperature.			

■Operating conditions

■Recommended temperature setting
- For cooling: 26-28˚C
- For heating: 20-24˚C

■Tips for saving energy
- Be careful not to cool (heat) the room too much.
  Keeping the temperature setting at a moderate level helps save energy.
- Cover windows with a blind or a curtain.
  Blocking sunlight and air from outdoors increases the cooling (heating) effect.
- Clogged air filters cause inefficient operation and waste energy. Clean them once in about every 2 weeks.

■Notes on the operating conditions
- The outdoor unit consumes some power to have its electric components work even while it is not operating.
  Connecting outdoor unit RXG25/35: 1-15W
  Other outdoor units: 15-20W
  The outdoor unit consumes 40 to 55W of power at the time of compressor preheating.
- If you are not going to use the air conditioner for a long period, for example in spring or autumn, turn the breaker off.
- Use the air conditioner in the following conditions.

MODE	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature : <2/3/4/5MXS> 10-46˚C <RXG> 10-46˚C Indoor temperature : 18-32˚C Indoor humidity : 80% max.	• A safety device may work to stop the operation. (In multi system, it may work to stop the operation of the outdoor unit only.) • Condensation may occur on the indoor unit and drip.
HEAT or RADIANT	Outdoor temperature : <2MXS> –10-24˚C <3/4/5MXS> –15-24˚C <RXG> –15-24˚C Indoor temperature : 10-30˚C	• A safety device may work to stop the operation.
DRY	Outdoor temperature : <2/3/4/5MXS> 10-46˚C <RXG> 10-46˚C Indoor temperature : 18-32˚C Indoor humidity : 80% max.	• A safety device may work to stop the operation. • Condensation may occur on the indoor unit and drip.

- Operation outside this humidity or temperature range may cause a safety device to disable the system.

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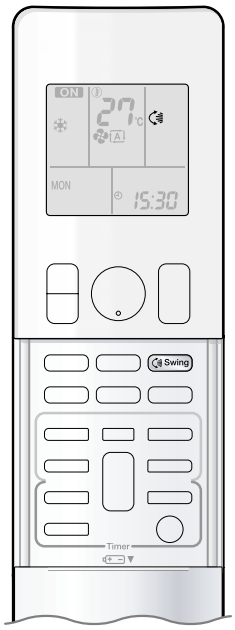
2.6 Adjusting the Airflow Direction and Rate

Adjusting the Airflow Direction and Rate

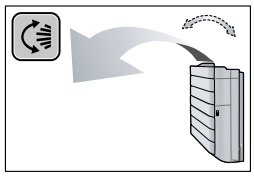


You can adjust the airflow direction to increase your comfort.

■To start auto swing

Upper and lower airflow direction

Press Swing .



- "Swing" is displayed on the LCD.
- The flap (horizontal blade) will begin to swing.

■To set the flap at desired position

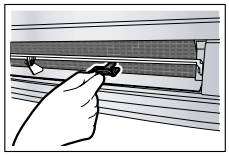
- This function is effective while flap is in auto swing mode.

Press Swing when the flap has reached the desired position.

- "Swing" disappears from the LCD.

■To adjust the louvers at desired position

Hold the knob and move the louvers.



- You will find a knob on the left-side and the right-side blades.
- When the unit is installed in the corner of a room, the direction of the louvers (vertical blades) should be facing away from the wall.
  If they face the wall, the wall will block off the wind, causing the cooling (or heating) efficiency to drop.
- If the flap is in the way, press Swing on the remote controller to move the flap out of the way and then adjust the louvers.

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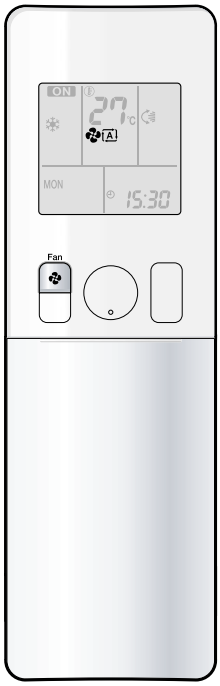
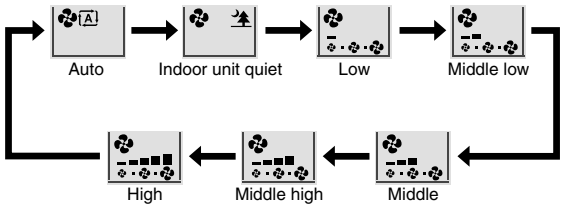
Adjusting the Airflow Direction and Rate



■To adjust the airflow rate setting

Press Fan **.**

• Each pressing of Fan advances the airflow rate setting in sequence.

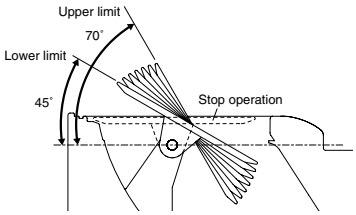


• When the airflow is set to " " , indoor unit quiet operation will start and the noise from the unit will become quieter.
• In indoor unit quiet operation, the airflow rate is set to a weak level.
• In DRY or RADIANT operation, the airflow rate setting is not variable.

NOTE

■Note on the angles of the flap

• The flap swinging range is the same by all operation. (See the figure.)



■Note on airflow rate setting

• At smaller airflow rates, the cooling (heating) effect is also smaller.

⚠ CAUTION

• Always use a remote controller to adjust the angles of the flap. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
• Be careful when adjusting the louvers.
Inside the air outlet, a fan is rotating at a high speed.

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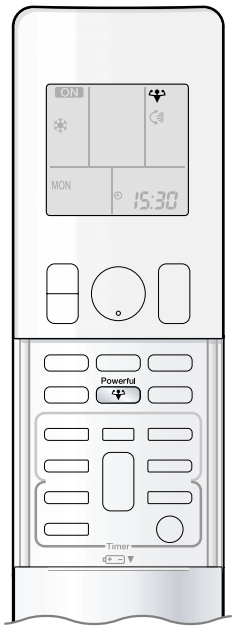
2.7 POWERFUL Operation

POWERFUL Operation



POWERFUL operation quickly maximises the cooling (heating) effect in any operation mode. You can get the maximum capacity.

■To start POWERFUL operation

Press Powerful **during operation.**

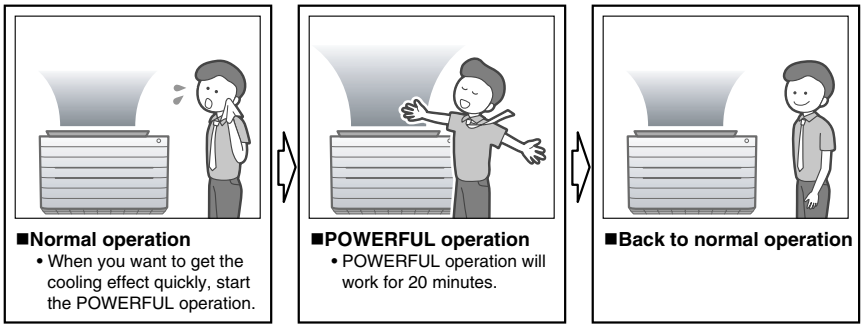
- POWERFUL operation ends in 20 minutes. Then the system automatically operates again with the previous settings which were used before POWERFUL operation.
- " " is displayed on the LCD.

■To cancel POWERFUL operation

Press Powerful **again.**

- " " disappears from the LCD.

[Example]



■Normal operation
- When you want to get the cooling effect quickly, start the POWERFUL operation.

■POWERFUL operation
- POWERFUL operation will work for 20 minutes.

■Back to normal operation

NOTE

■Notes on POWERFUL operation

- When using POWERFUL operation, there are some functions which are not available.
- POWERFUL operation cannot be used together with RADIANT2, ECONO or OUTDOOR UNIT QUIET operation. Priority is given to the function of whichever button is pressed last.
- POWERFUL operation can only be set when the unit is running. Pressing On/Off causes the settings to be canceled, and the " " disappears from the LCD.
- POWERFUL operation will not increase the capacity of the air conditioner if the air conditioner is already in operation with its maximum capacity demonstrated.
- **In COOL, HEAT and RADIANT1 operation**
  To maximise the cooling (heating) effect, the capacity of outdoor unit is increased and the airflow rate is fixed to the maximum setting. The temperature and airflow settings are not variable.
- **In DRY operation**
  The temperature setting is lowered by 2.5˚C and the airflow rate is slightly increased.
- **In FAN operation**
  The airflow rate is fixed to the maximum setting.
- **In AUTO operation**
  To maximise the cooling (heating) effect, the capacity of outdoor unit is increased and the airflow rate is fixed to the maximum setting.

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2.8 OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET operation lowers the noise level of the outdoor unit by changing the frequency and fan speed on the outdoor unit. This function is convenient during the night.

■To start OUTDOOR UNIT QUIET operation

Press Quiet **.**

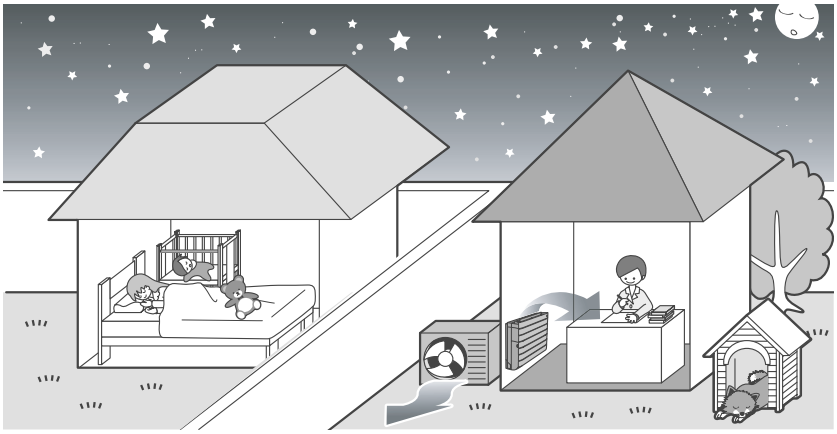
• " " is displayed on the LCD.

■To cancel OUTDOOR UNIT QUIET operation

Press Quiet **again.**

• " " disappears from the LCD.

[Example] **Using the OUTDOOR UNIT QUIET operation during the night.**



• The noise level of the outdoor unit will be lower.
This is convenient when you need to consideration for your neighbourhood.

NOTE

■Notes on OUTDOOR UNIT QUIET operation

- This function is available in COOL, HEAT, and AUTO operation.
  This is not available in RADIANT, FAN and DRY operation.
- POWERFUL operation and OUTDOOR UNIT QUIET operation cannot be used at the same time.
  Priority is given to the function of whichever button is pressed last.
- Even the operation is stopped using the remote controller or the indoor unit ON/OFF switch when using OUTDOOR UNIT QUIET operation, " " will remain on the remote controller display.
- OUTDOOR UNIT QUIET operation will drop neither the frequency nor fan speed if they have been already dropped low enough.

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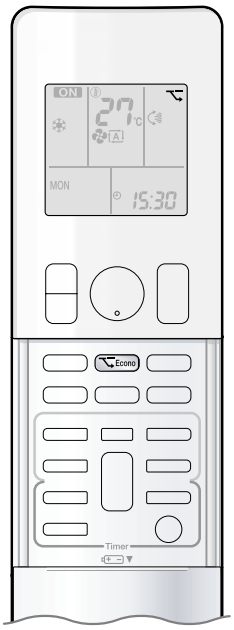
2.9 ECONO Operation

ECONO Operation



ECONO operation is a function which enables efficient operation by limiting the maximum power consumption value.
This function is useful for cases in which attention should be paid to ensure a circuit breaker will not trip when the product runs alongside other appliances.

■To start ECONO operation

Press Econo during operation.

• " " is displayed on the LCD.

■To cancel ECONO operation

Press Econo again.

• " " disappears from the LCD.

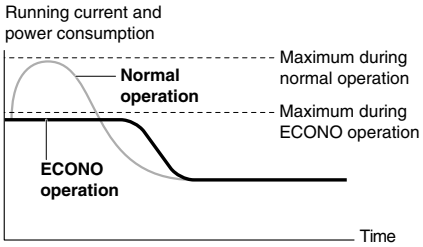
[Example]

Normal operation

• In case the air conditioner and other appliances which require high power consumption are used at same time, a circuit breaker may trip if the air conditioner operate with its maximum capacity.

ECONO operation

• The maximum power consumption of the air conditioner is limited by using ECONO operation.
The circuit breaker will hardly trip even if the air conditioner and other appliances are used at same time.



From start up until set temperature is reached

• This diagram is a representation for illustrative purposes only.
The maximum running current and power consumption of the air conditioner in ECONO operation vary with the connecting outdoor unit.

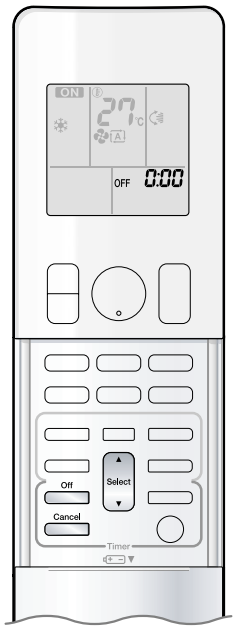
NOTE

■ Notes on ECONO operation

- ECONO operation can only be set when the unit is running. Pressing On/Off causes the settings to be canceled, and the " " disappears from the LCD.
- ECONO operation is a function which enables efficient operation by limiting the power consumption of the outdoor unit (operating frequency).
- ECONO operation functions in AUTO, COOL, DRY, and HEAT operation.
  This is not available in RADIANT and FAN operation.
- POWERFUL operation and ECONO operation cannot be used at the same time.
  Priority is given to the function of whichever button is pressed last.
- If the level of power consumption is already low, ECONO operation will not drop the power consumption.

2.10 OFF TIMER Operation

OFF TIMER Operation



Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning. You can also use OFF TIMER and ON TIMER in combination.

■To use OFF TIMER operation

• Check that the clock is correct.
If not, set the clock to the present time. ▶Page 10

1. Press Off **.**

• " 0:00 " is displayed on the LCD.
• " OFF " blinks.

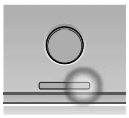
• " ⏲ " and day of the week disappear from the LCD.

2. Press Select **until the time setting reaches the point you like.**

• Each pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the time setting rapidly.

3. Press Off **again.**

• " OFF " and setting time are displayed on the LCD.
• The OPERATION lamp blinks and the TIMER lamp lights yellow. ▶Page 5



Display

■To cancel OFF TIMER operation

Press Cancel **.**

• " OFF " and setting time disappear from the LCD.
• " ⏲ " and day of the week are displayed on the LCD.

NOTE

■ **Notes on TIMER operation**
• When TIMER is set, the present time is not displayed.
• Once you set ON/OFF TIMER, the time setting is kept in the memory. The memory is canceled when remote controller batteries are replaced.
• When operating the unit via the ON/OFF TIMER, the actual length of operation may vary from the time entered by the user. (Maximum approximately 10 minutes)

■ **NIGHT SET mode**
• When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (0.5˚C up in COOL, 2.0˚C down in HEAT) to prevent excessive cooling (heating) for your pleasant sleep.

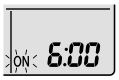
2.11 ON TIMER Operation

ON TIMER Operation

■To use ON TIMER operation

• Check that the clock is correct.
If not, set the clock to the present time. ▶Page 10

1. Press On **.**



• " 6:00 " is displayed on the LCD.
• " ON " blinks.

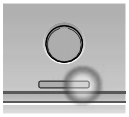
• " ◷ " and day of the week disappear from the LCD.

2. Press Select **until the time setting reaches the point you like.**

• Each pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the time setting rapidly.

3. Press On **again.**

• " ON " and setting time are displayed on the LCD.
• The OPERATION lamp blinks and the TIMER lamp lights yellow. ▶Page 5



Display

■To cancel ON TIMER operation

Press Cancel **.**

• " ON " and setting time disappear from the LCD.
• " ◷ " and day of the week are displayed on the LCD.

■To combine ON TIMER and OFF TIMER

• A sample setting for combining the 2 timers is shown below.

(Example)
Present time: 23:00 (The unit operating)
OFF TIMER at 0:00
ON TIMER at 14:00
Combined

NOTE

■ **In the following cases, set the timer again.**
• After a breaker has turned off.
• After a power failure.
• After replacing batteries in the remote controller.

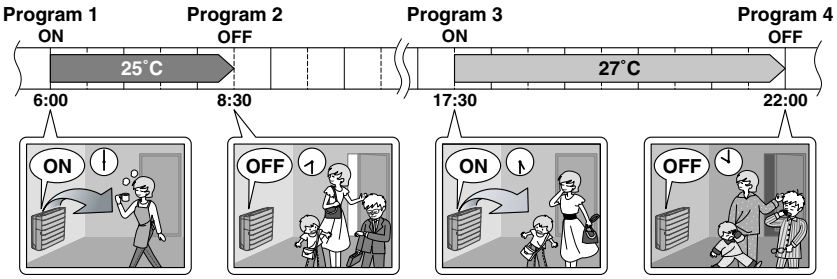
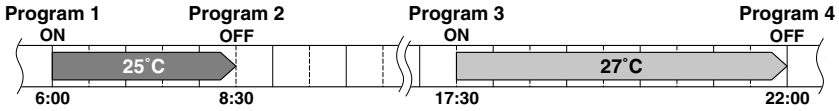
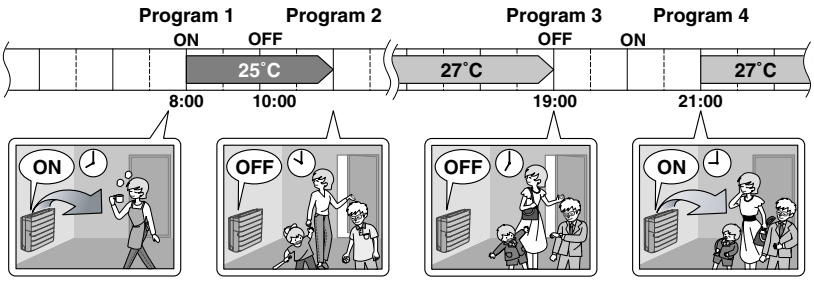
2.12 WEEKLY TIMER Operation

WEEKLY TIMER Operation

Up to 4 timer settings can be saved for each day of the week. It is convenient if the WEEKLY TIMER is set according to the family's life style.

■ Using in these cases of WEEKLY TIMER

[Example] **The same timer settings are made for the week from Monday through Friday while different timer settings are made for the weekend.**

[Monday]	Make timer settings up to programs 1-4. Page 22 
[Tuesday] to [Friday]	Use the copy mode to make settings for Tuesday to Friday, because these settings are the same as those for Monday. Page 24 
[Saturday]	No timer settings
[Sunday]	Make timer settings up to programs 1-4. Page 22 

- Up to 4 reservations per day and 28 reservations per week can be set in the WEEKLY TIMER. The effective use of the copy mode ensures ease of making reservations.
- The use of ON-ON-ON-ON settings, for example, makes it possible to schedule operating mode and set temperature changes. Furthermore, by using OFF-OFF-OFF-OFF settings, only the turn off time of each day can be set. This will turn off the air conditioner automatically if the user forgets to turn it off.

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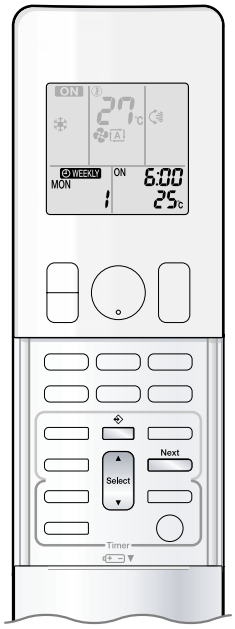
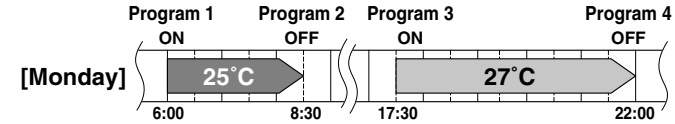


■To use WEEKLY TIMER operation

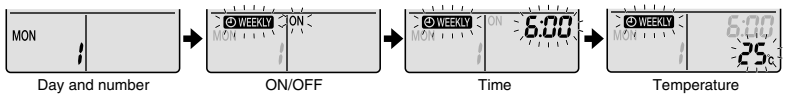
Setting mode

• Make sure the day of the week and time are set. If not, set the day of the week and time.

▸Page 10



Setting Displays



1. Press ◈ .

• The day of the week and the reservation number of the current day will be displayed.
• 1 to 4 settings can be made per day

2. Press Select **to select the desired day of the week and reservation number.**

• Pressing Select changes the reservation number and the day of the week.

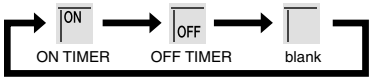
3. Press Next .

• The day of the week and reservation number will be set.
• " WEEKLY " and " ON " blink.

4. Press Select **to select the desired mode.**

• Pressing Select changes " ON " or " OFF " setting in sequence.

Pressing ▲ alternates the following items appearing on the LCD in rotational sequence.



• In case the reservation has already been set, selecting "blank" deletes the reservation.
• Go to step ***9*** if "blank" is selected.
• To return to the day of the week and reservation number setting, press Back .

5. Press Next .

• The ON/OFF TIMER mode will be set.
• " WEEKLY " and the time blink.

WEEKLY TIMER Operation

6. Press Select to select the desired time.

- The time can be set between 0:00 and 23:50 in 10 minute intervals.
- To return to the ON/OFF TIMER mode setting, press Back.
- Go to step *9* when setting the OFF TIMER.

7. Press Next .

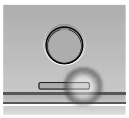
- The time will be set.
- " WEEKLY " and the temperature blink.

8. Press Select to select the desired temperature.

- The temperature can be set between 10˚C and 32˚C.
  COOL or AUTO: The unit operates at 18˚C even if it is set at 10 to 17˚C.
  HEAT or AUTO: The unit operates at 30˚C even if it is set at 31 to 32˚C.
- To return to the time setting, press Back .
- The set temperature is only displayed when the mode setting is on.

9. Press Next .

- Be sure to direct the remote controller toward the indoor unit and check for a receiving tone and flashing the OPERATION lamp.
- The temperature is set while in ON TIMER operation, and the time is set while in OFF TIMER operation.
- The next reservation screen will appear.
- To continue further settings, repeat the procedure from step *4*.
- The TIMER lamp lights yellow. ▶Page 5



Display

10. Press to complete the setting.

- " WEEKLY " is displayed on the LCD and WEEKLY TIMER operation is activated.
- A reservation made once can be easily copied and the same settings used for another day of the week. Refer to copy mode. ▶Page 24

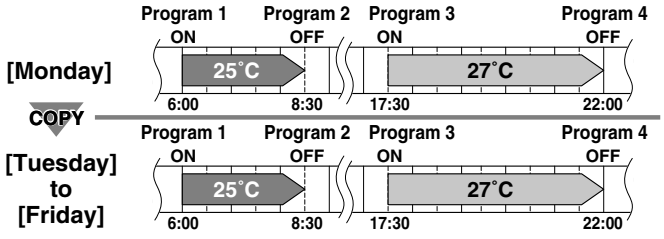
NOTE

■ Notes on WEEKLY TIMER operation

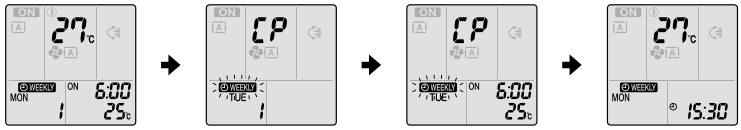
- Do not forget to set the clock on the remote controller first. ▶Page 10
- The day of the week, ON/OFF TIMER mode, time and set temperature (only for ON TIMER mode) can be set with WEEKLY TIMER. Other settings for ON TIMER are based on the settings just before the operation.
- Both WEEKLY TIMER and ON/OFF TIMER operation cannot be used at the same time. The ON/OFF TIMER operation has priority if it is set while WEEKLY TIMER is still active. The WEEKLY TIMER will go into standby state, and " WEEKLY " will disappear from the LCD. When ON/OFF TIMER is up, the WEEKLY TIMER will automatically become active.
- Shutting the breaker off, power failure, and other similar events will render operation of the indoor unit's internal clock inaccurate. Reset the clock. ▶Page 10

Copy mode

• A reservation made once can be copied to another day of the week. The whole reservation of the selected day of the week will be copied.



Setting Displays



1. **Press** [ ] .

2. **Press** [Select] **to confirm the day of the week to be copied.**

3. **Press** [Copy] .

• The whole reservation of the selected day of the week will be copied.

4. **Press** [Select] **to select the destination day of the week.**

5. **Press** [Copy] .

• Be sure to direct the remote controller toward the indoor unit and check for a receiving tone and flashing the OPERATION lamp.
• The reservation will be copied to the selected day of the week. The whole reservation of the selected day of the week will be copied.
• To continue copying the settings to other days of the week, repeat step ***4*** and step ***5***.

6. **Press** [ ] **to complete the setting.**

• " WEEKLY " is displayed on the LCD and WEEKLY TIMER operation is activated.

NOTE

■ **Note on copy mode**

• The entire reservation of the source day of the week is copied in the copy mode.

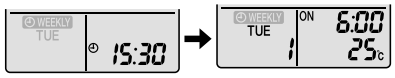
In the case of making a reservation change for any day of the week individually after copying the content of weekly reservations, press [ ] and change the settings in the steps of setting mode. ▶ Page 22

WEEKLY TIMER Operation

■ Confirming a reservation

• The reservation can be confirmed.

Setting Displays



1. Press [ ] .

• The day of the week and the reservation number of the current day will be displayed.

2. Press [Select] to select the day of the week and the reservation number to be confirmed.

• Pressing [Select] displays the reservation details.

• To change the confirmed reserved settings, select the reservation number and press [Next].

The mode is switched to setting mode. Go to setting mode step *2*. Page 22

3. Press [ ] to exit confirming mode.

■ To deactivate WEEKLY TIMER operation

Press [Weekly] while " WEEKLY " is displayed on the LCD.

• The " WEEKLY " will disappear from the LCD.
• The TIMER lamp goes off.
• To reactivate the WEEKLY TIMER operation, press [Weekly] again.
• If a reservation deactivated with [Weekly] is activated once again, the last reservation mode will be used.

⚠ CAUTION

• If not all the reservation settings are reflected, deactivate the WEEKLY TIMER operation once. Then press [Weekly] again to reactivate the WEEKLY TIMER operation.

■ To delete reservations

The individual reservation

1. Press [ ] .

• The day of the week and the reservation number will be displayed.

2. Press [Select] to select the day of the week and the reservation number to be deleted.

3. Press [Next].

• " WEEKLY " and " ON " or " OFF " blink.

4. Press [Select] and select " blank ".

• Pressing [Select] changes ON/OFF TIMER mode.

Pressing ▲ alternates the following items appearing on the LCD in rotational sequence.

• The reservation will be no setting with selecting "blank".

ON TIMER → OFF TIMER → blank

5. Press [Next].

• The selected reservation will be deleted.

6. Press [ ] .

• If there are still other reservations, WEEKLY TIMER operation will be activated.

The reservations for each day of the week

• This function can be used for deleting reservations for each day of the week.
• It can be used while confirming or setting reservations.

1. Press [Select] to select the day of the week to be deleted.

2. Hold [Weekly] for 5 seconds.

• The reservation of the selected day of the week will be deleted.

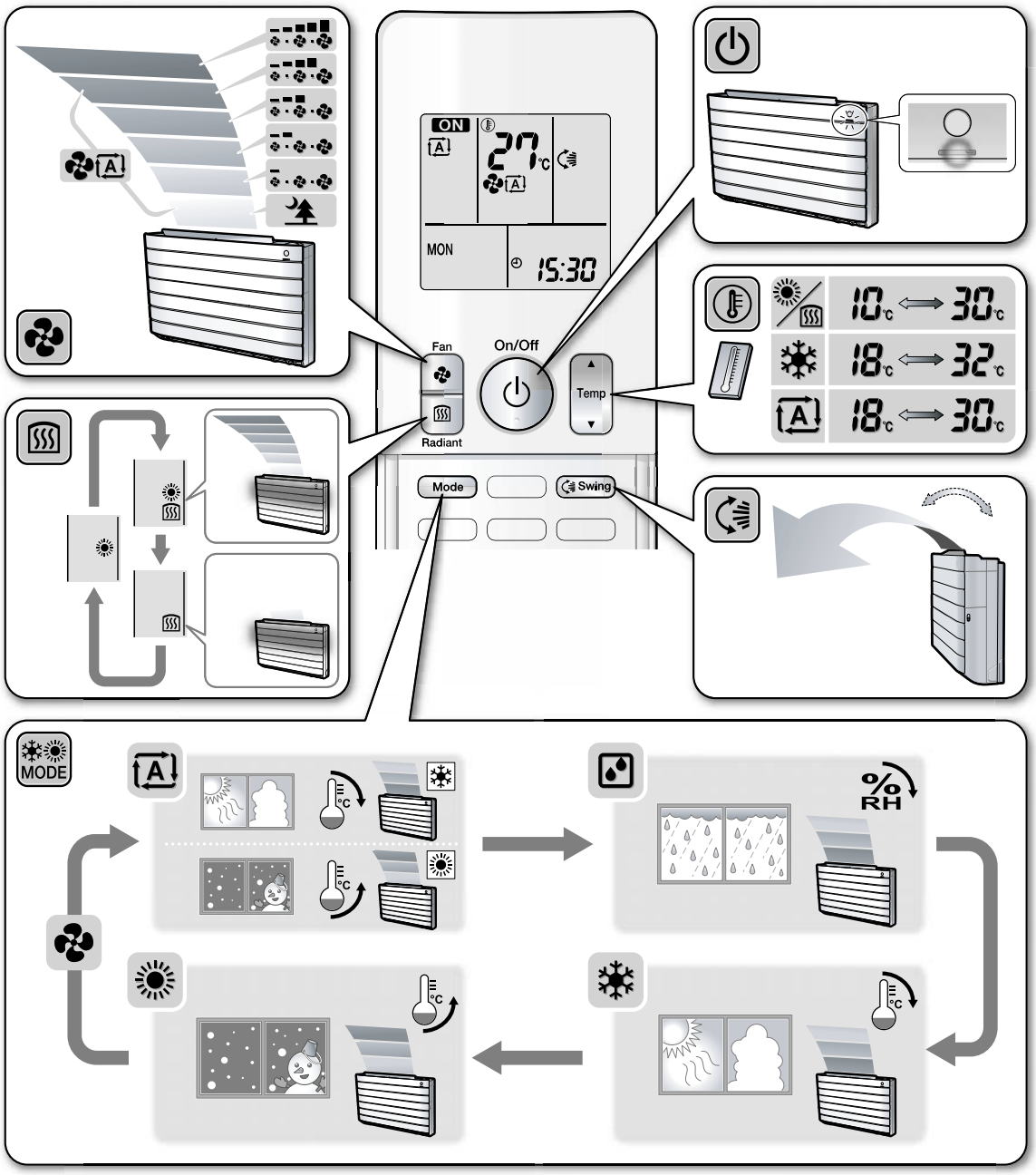
All reservations

Hold [Weekly] for 5 seconds while normal display.

• Be sure to direct the remote controller toward the indoor unit and check for a receiving tone.
• This operation is not effective while WEEKLY TIMER is being set.
• All reservations will be deleted.

2.13 Quick Reference

Quick Reference



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Part 6
Service Diagnosis

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1. Troubleshooting with LED

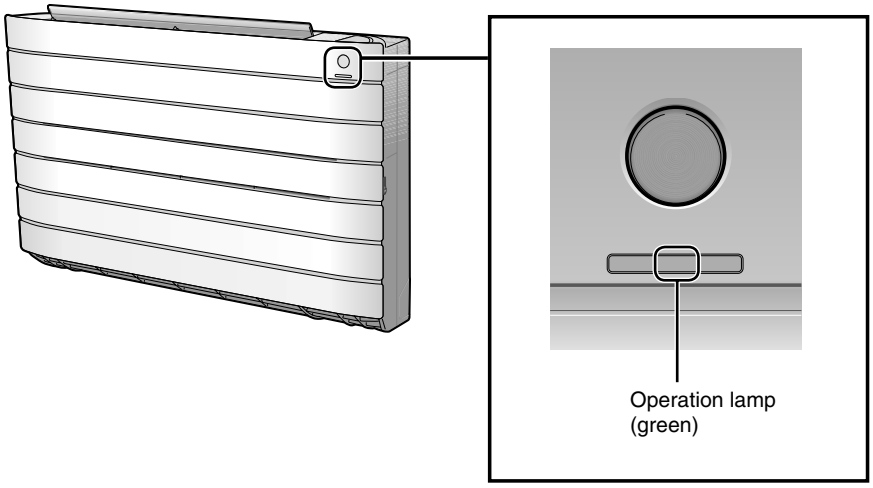
1.1 Indoor Unit

Operation Lamp

The operation lamp blinks when any of the following errors is detected.

1. When a protection device of the indoor or outdoor unit is activated, or when the thermistor malfunctions.
2. When a signal transmission error occurs between the indoor and outdoor units.

In either case, conduct the diagnostic procedure described in the following pages.



(R14646)

Service Monitor

The indoor unit has one green LED (LED A) on the main PCB. When the microcomputer works in order, the LED A blinks.

1.2 Outdoor Unit

The outdoor unit has one green LED (LED A) on the PCB. When the microcomputer works in order, the LED A blinks.

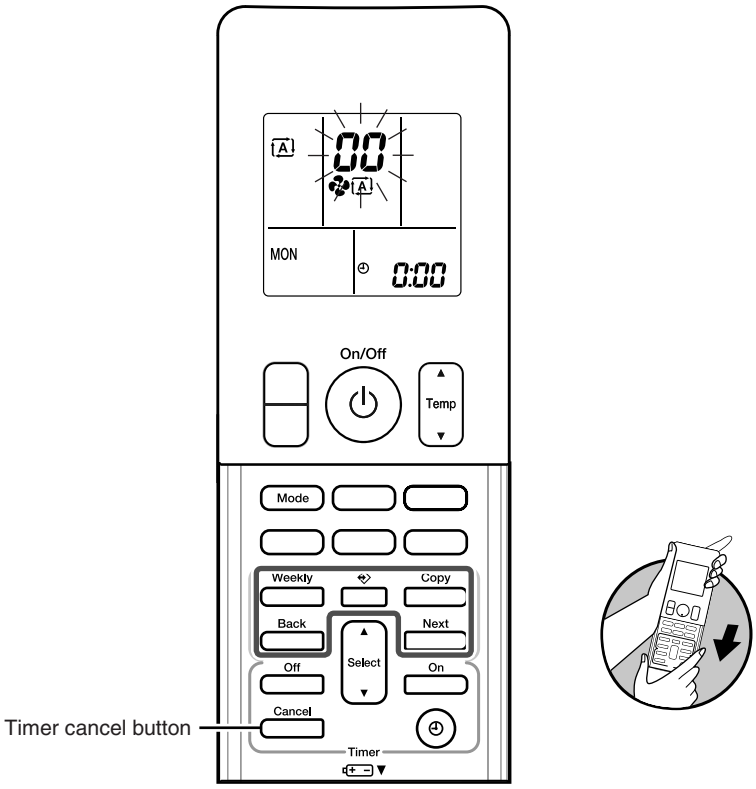
2. Problem Symptoms and Measures

Symptom	Check Item	Details of Measure	Reference Page
The unit does not operate.	Check the power supply.	Check if the rated voltage is supplied.	—
	Check the type of the indoor unit.	Check if the indoor unit type is compatible with the outdoor unit.	—
	Check the outdoor temperature.	Heating operation cannot be used when the outdoor temperature is 24°C or higher, and cooling operation cannot be used when the outdoor temperature is below 10°C.	—
	Diagnose with remote controller indication.	—	76
	Check the remote controller addresses.	Check if address settings for the remote controller and indoor unit are correct.	224
Operation sometimes stops.	Check the power supply.	A power failure of 2 to 10 cycles stops air conditioner operation. (Operation lamp OFF)	—
	Check the outdoor temperature.	Heating operation cannot be used when the outdoor temperature is 24°C or higher, and cooling operation cannot be used when the outdoor temperature is below 10°C.	—
	Diagnose with remote controller indication.	—	76
The unit operates but does not cool, or does not heat.	Check for wiring and piping errors in the connection between the indoor unit and outdoor unit.	—	—
	Check for thermistor detection errors.	Check if the thermistor is mounted securely.	—
	Check for faulty operation of the outdoor electronic expansion valve.	Set the unit to cooling operation, and check the temperature of the liquid pipe to see if the outdoor electronic expansion valve works.	—
	Diagnose with remote controller indication.	—	76
	Diagnose by service port pressure and operating current.	Check for refrigerant shortage.	115
Large operating noise and vibrations	Check the output voltage of the power module.	—	130
	Check the power module.	—	—
	Check the installation condition.	Check if the required spaces for installation (specified in the installation manual) are provided.	—

3. Service Check Function

Check Method 1

1. When the timer cancel button is held down for 5 seconds, 00 is displayed on the temperature display screen.



< ARC466 Series > (R14553)

2. Press the timer cancel button repeatedly until a long beep sounds.

■ The code indication changes in the sequence shown below.

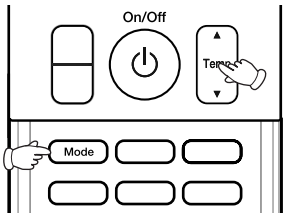
No.	Code	No.	Code	No.	Code
1	00	14	C7	27	UA
2	U4	15	A3	28	UH
3	L5	16	H8	29	P4
4	E6	17	H9	30	L3
5	H6	18	C9	31	L4
6	H0	19	C4	32	H7
7	A6	20	C5	33	U2
8	E7	21	CE	34	EA
9	U0	22	J3	35	AH
10	F3	23	J6	36	FA
11	A5	24	E5	37	H1
12	F6	25	A1	38	P9
13	A9	26	E1		

Note:

1. A short beep or two consecutive beeps indicate non-corresponding codes.
2. To return to the normal mode, hold the timer cancel button down for 5 seconds. When the remote controller is left untouched for 60 seconds, it also returns to the normal mode.
3. Not all the error codes are displayed. When you cannot find the error code, try the check method 2. (→ Refer to page 74.)

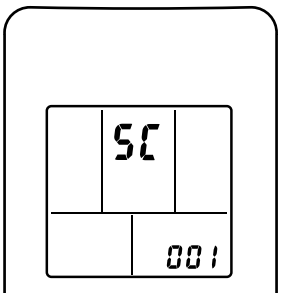
Check Method 2

1. Press the center of the [Temp] button and the [Mode] button at the same time.



(R11669)

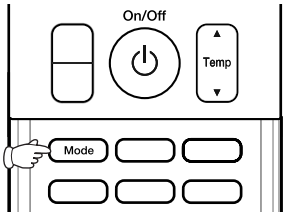
SC is displayed on the LCD.



(R11821)

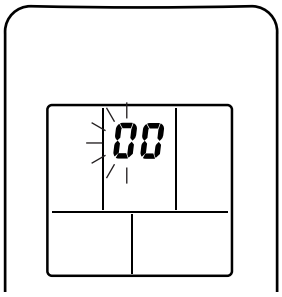
2. Select SC (service check) with the [Temp] ▲ or ▼ button.

3. Press the [Mode] button to enter the service check mode.



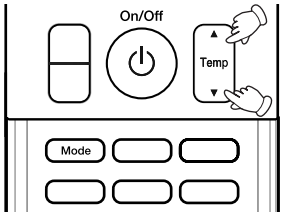
(R11672)

The left-side number blinks.



(R11670)

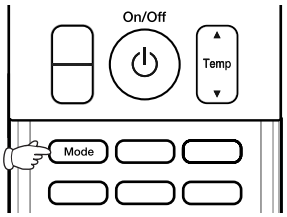
4. Press the [Temp] ▲ or ▼ button and change the number until you hear the two consecutive beeps or the long beep.



(R11671)

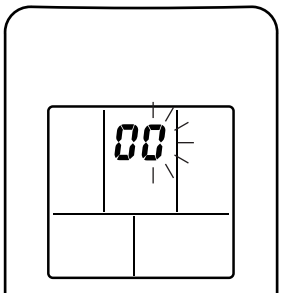
5. Diagnose by the sound.
   ★beep : The left-side number does not correspond with the error code.
   ★two consecutive beeps : The left-side number corresponds with the error code but the right-side number does not.
   ★long beep : Both the left-side and right-side numbers correspond with the error code. The numbers indicated when you hear the long beep are the error code.
   (Error codes and description → Refer to page 76.)

6. Press the [Mode] button.



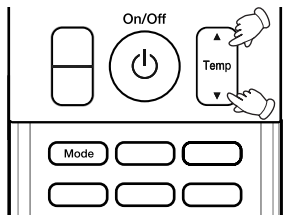
(R11672)

The right-side number blinks.



(R11673)

7. Press the [Temp] ▲ or ▼ button and change the number until you hear the long beep.

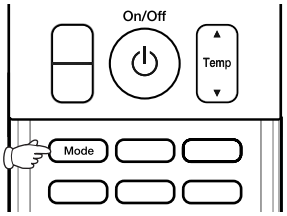


(R11671)

8. Diagnose by the sound.
   ★beep : The left-side number does not correspond with the error code.
   ★two consecutive beeps : The left-side number corresponds with the error code but the right-side number does not.
   ★long beep : Both the left-side and right-side numbers correspond with the error code.

9. Determine the error code.
   The numbers indicated when you hear the long beep are the error code.
   Error codes and description → Refer to page 76.

10. Press the [Mode] button for 5 seconds to exit from the service check mode.
    (When the remote controller is left untouched for 60 seconds, it returns to the normal mode also.)



(R11672)

4. Troubleshooting

4.1 Error Codes and Description

	Error Codes	Description	Reference Page
System	00	Normal	—
	U0★	Refrigerant shortage	115
	U2	Low-voltage detection or over-voltage detection	118
	U4	Signal transmission error (between indoor unit and outdoor unit)	86
	U8	Unspecified voltage (between indoor unit and outdoor unit)	88
Indoor Unit	A1	Indoor unit PCB abnormality	77
	A5	Freeze-up protection control or heating peak-cut control	79
	A6	Fan motor (DC motor) or related abnormality	81
	A9	Radiant panel temperature rise, indoor electronic expansion valve (motor operated valve) abnormality, freeze-up protection control	83
	C4	Indoor heat exchanger thermistor or related abnormality	85
	C9	Room temperature thermistor or related abnormality	85
	CE	Radiant panel thermistor or related abnormality	85
Outdoor Unit	E1	Outdoor unit PCB abnormality	89
	E5★	OL activation (compressor overload)	91
	E6★	Compressor lock	92
	E7★	DC fan lock	93
	E8	Input overcurrent detection	94
	EA	Four way valve abnormality	95
	F3	Discharge pipe temperature control	97
	F6	High pressure control in cooling	98
	H0	Compressor system sensor abnormality	99
	H6	Position sensor abnormality	101
	H8	DC voltage / current sensor abnormality (25/35 class)	104
		CT or related abnormality (50 class)	105
	H9	Outdoor temperature thermistor or related abnormality	107
	J3★	Discharge pipe thermistor or related abnormality	107
	J6	Outdoor heat exchanger thermistor or related abnormality	107
	L3	Electrical box temperature rise	109
	L4	Radiation fin temperature rise	111
	L5★	Output overcurrent detection	113
	P4	Radiation fin thermistor or related abnormality	107
	U7	Signal transmission error on outdoor unit PCB (50 class only)	120

★: Displayed only when system-down occurs.

4.2 Indoor Unit PCB Abnormality

Remote Controller Display

A1

Method of Malfunction Detection

The system checks if the circuit works properly within the microcomputer of the indoor unit.

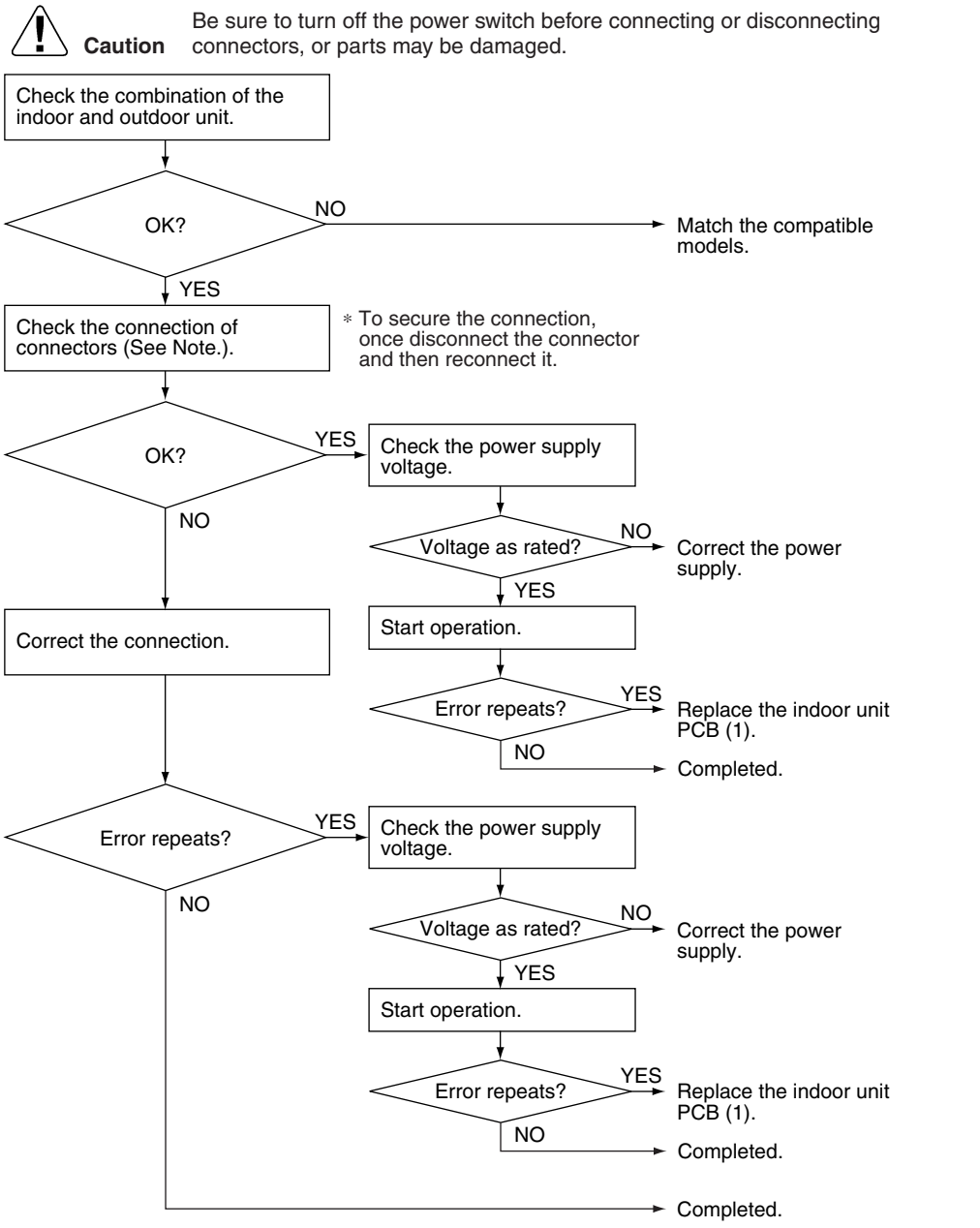
Malfunction Decision Conditions

The system cannot set the internal settings.

Supposed Causes

- Wrong models interconnected
- Defective indoor unit PCB
- Disconnection of connector
- Reduction of power supply voltage

Troubleshooting



Note: Check the following connector.

Model Type	Connector
Floor Standing Type	Terminal board ~ Main PCB

4.3 Freeze-up Protection Control or Heating Peak-cut Control

Remote Controller Display

A5

Method of Malfunction Detection

- Freeze-up protection control
  During cooling operation, the freeze-up protection control (operation halt) is activated according to the temperature detected by the indoor heat exchanger thermistor.
- Heating peak-cut control
  During heating operation, the temperature detected by the indoor heat exchanger thermistor is used for the heating peak-cut control (operation halt, outdoor fan stop, etc.)

Malfunction Decision Conditions

- Freeze-up protection control
  During cooling operation, the indoor heat exchanger temperature is below 0°C.
- Heating peak-cut control
  During heating operation, the indoor heat exchanger temperature is above 65°C

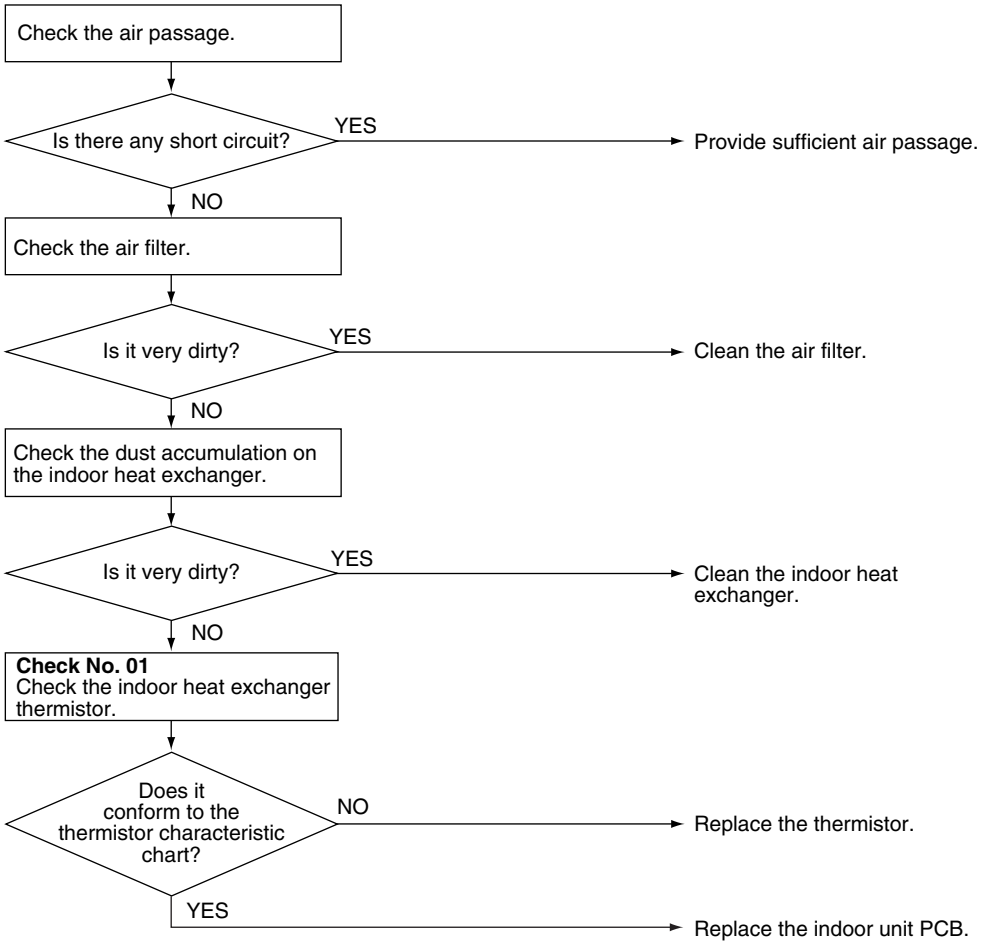
Supposed Causes

- Short-circuited air
- Clogged air filter of the indoor unit
- Dust accumulation on the indoor heat exchanger
- Defective indoor heat exchanger thermistor
- Defective indoor unit PCB

Troubleshooting

Check No.01
Refer to P.121

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R14402)

4.4 Fan Motor (DC Motor) or Related Abnormality

Remote Controller Display

Method of Malfunction Detection

The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.

Malfunction Decision Conditions

The detected rotation speed does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.

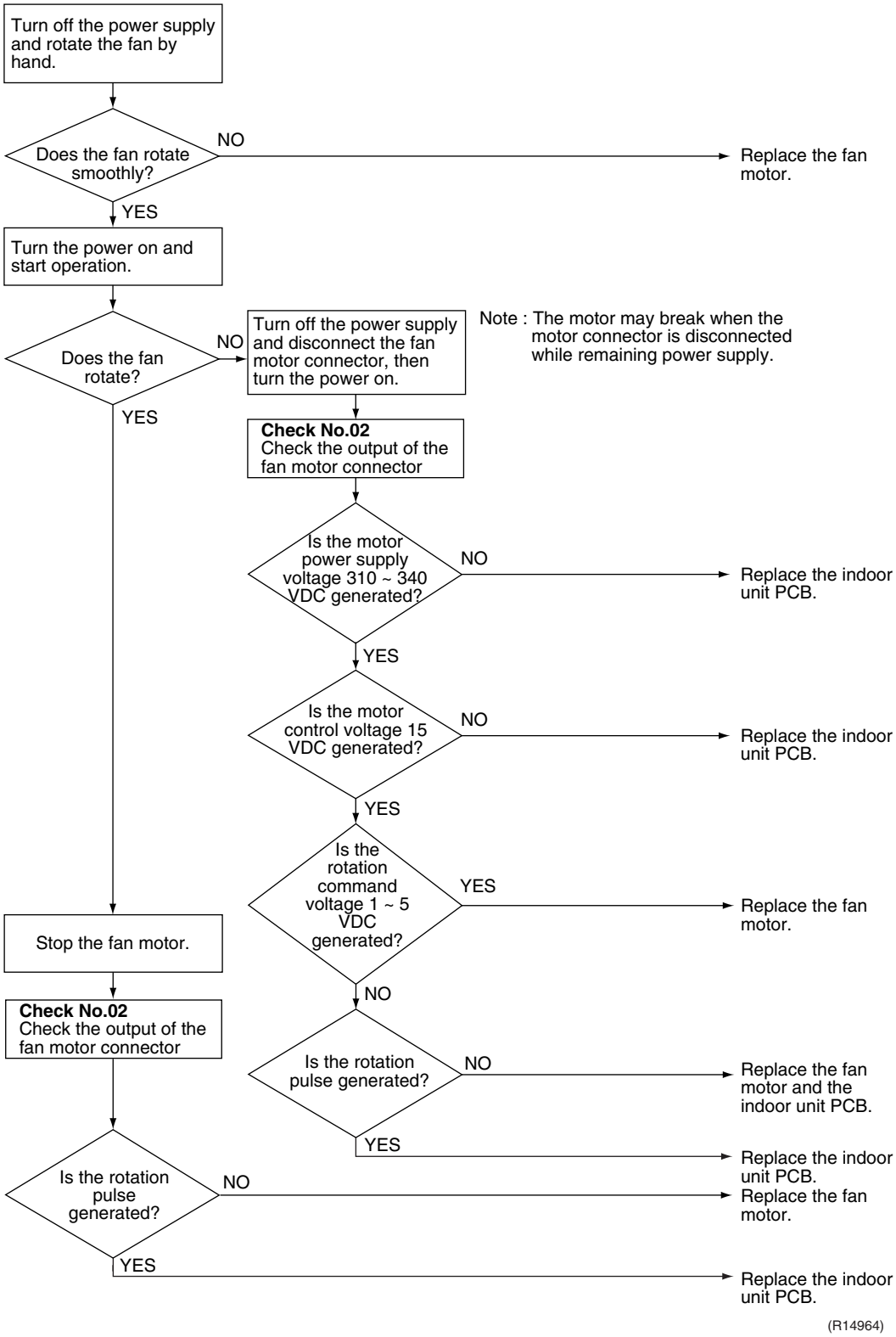
Supposed Causes

- Layer short inside the fan motor winding
- Breaking of wire inside the fan motor
- Breaking of the fan motor lead wires
- Defective capacitor of the fan motor
- Defective indoor unit PCB

Troubleshooting

Check No.02
Refer to P.122

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.


Turn off the power supply and rotate the fan by hand.
Does the fan rotate smoothly?
NO
Replace the fan motor.
YES
Turn the power on and start operation.
Does the fan rotate?
NO
Turn off the power supply and disconnect the fan motor connector, then turn the power on.
Note : The motor may break when the motor connector is disconnected while remaining power supply.
YES
Check No.02
Check the output of the fan motor connector
Is the motor power supply voltage 310 ~ 340 VDC generated?
NO
Replace the indoor unit PCB.
YES
Is the motor control voltage 15 VDC generated?
NO
Replace the indoor unit PCB.
YES
Is the rotation command voltage 1 ~ 5 VDC generated?
YES
Replace the fan motor.
NO
Stop the fan motor.
Check No.02
Check the output of the fan motor connector
Is the rotation pulse generated?
NO
Replace the fan motor and the indoor unit PCB.
YES
Replace the indoor unit PCB.
Is the rotation pulse generated?
NO
Replace the fan motor.
YES
Replace the indoor unit PCB.

(R14964)

4.5 Radiant Panel Temperature Rise, Indoor Electronic Expansion Valve (Motor Operated Valve) Abnormality, Freeze-up Protection Control

Remote Controller Display

A9

Method of Malfunction Detection

Radiant panel temperature rise
During RADIANT operation, high temperature control (e.g., operation halt, indoor electronic expansion valve closure) is activated according to the temperature detected by the radiant panel thermistors.

Indoor electronic expansion valve abnormality
The indoor electronic expansion valve is required to be fully closed during cooling, dry or heating operation. When the indoor electronic expansion valve is open due to malfunction, the refrigerant flows into the radiant panel and the radiant panel temperature rises or drops.
The indoor electronic expansion valve is required to be open during RADIANT operation. When the indoor electronic expansion valve is closed due to malfunction, the refrigerant does not flow into the radiant panel and the radiant panel temperature does not rise.
Operation stops when any of these cases is detected by the system.

Freeze-up protection control
The temperature detected by the radiant panel thermistors is used to prevent the indoor unit from freezing during cooling operation.

Malfunction Decision Conditions

Radiant panel temperature rise
The radiant panel surface temperature calculated by the radiant panel thermistors is above 70°C.

Indoor electronic expansion valve abnormality
- During cooling or dry operation, the temperature detected by the radiant panel thermistor (ϕ 4) has dropped.
- During heating operation, the temperature detected by the radiant panel thermistor (ϕ 4) has risen.
- During RADIANT operation, the temperature detected by the radiant panel thermistor (ϕ 4) does not rise.

Freeze-up protection control
During cooling operation, the operation stops when the temperature detected by the radiant panel thermistor (ϕ 4) has dropped.

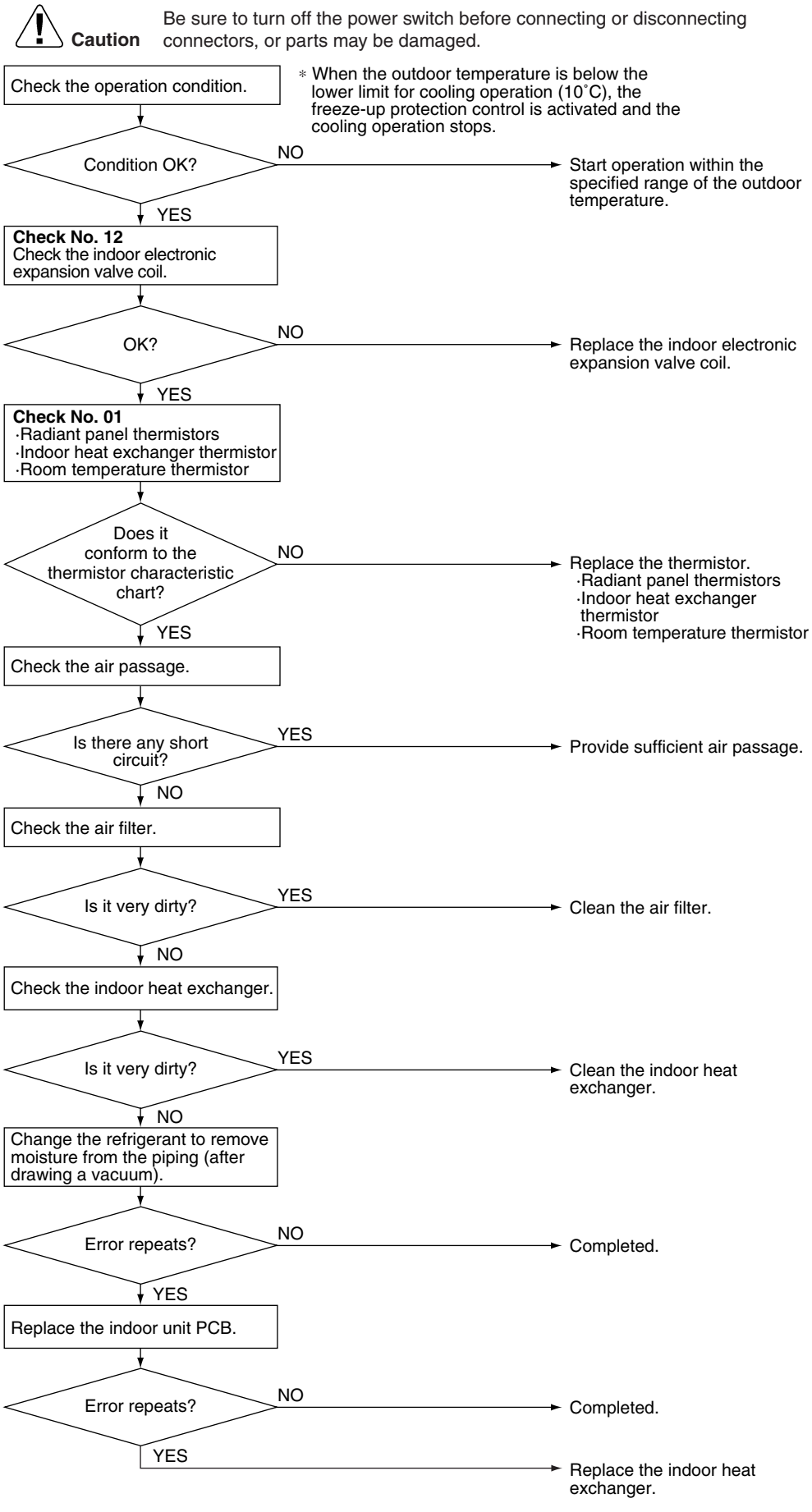
Supposed Causes

- Clogged air filter of the indoor unit
- Dust accumulation on the indoor heat exchanger
- Short-circuited air
- Defective radiant panel thermistor(s)
- Defective indoor heat exchanger thermistor
- Defective room temperature thermistor
- Defective indoor electronic expansion valve (or coil)

Troubleshooting

Check No.01
Refer to P.121

Check No.12
Refer to P.123



(R14647)

4.6 Thermistor or Related Abnormality (Indoor Unit)

Remote Controller Display

C4, C9, CE

Method of Malfunction Detection

The temperatures detected by the thermistors determine thermistor errors.

Malfunction Decision Conditions

The thermistor input is more than 4.96 V or less than 0.04 V during compressor operation.

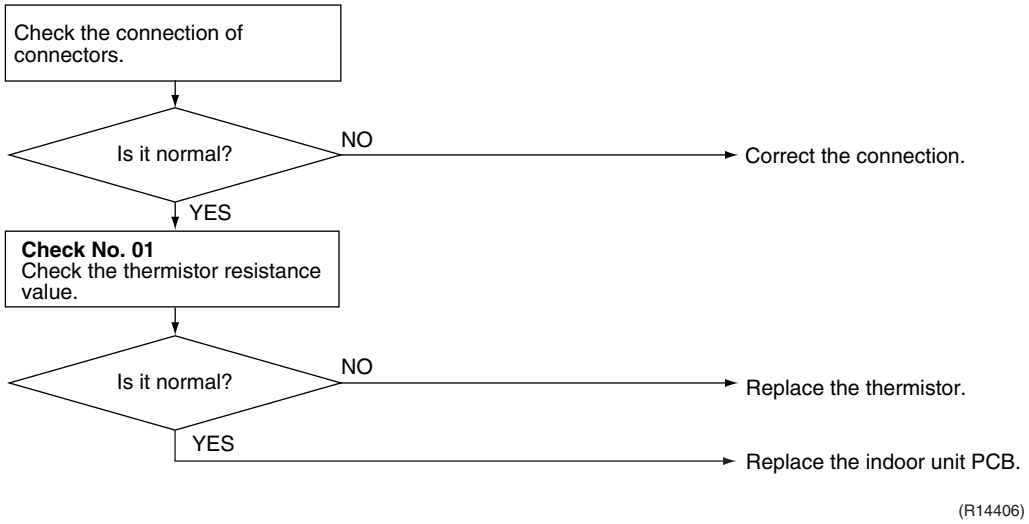
Supposed Causes

- Disconnection of connector
- Defective thermistor
- Defective indoor unit PCB

Troubleshooting

Check No.01
Refer to P.121

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



C4 : Indoor heat exchanger thermistor
C9 : Room temperature thermistor
CE : Radiant panel thermistor

4.7 Signal Transmission Error (between Indoor Unit and Outdoor Unit)

Remote Controller Display

U4

Method of Malfunction Detection

The data received from the outdoor unit in indoor unit-outdoor unit signal transmission is checked whether it is normal.

Malfunction Decision Conditions

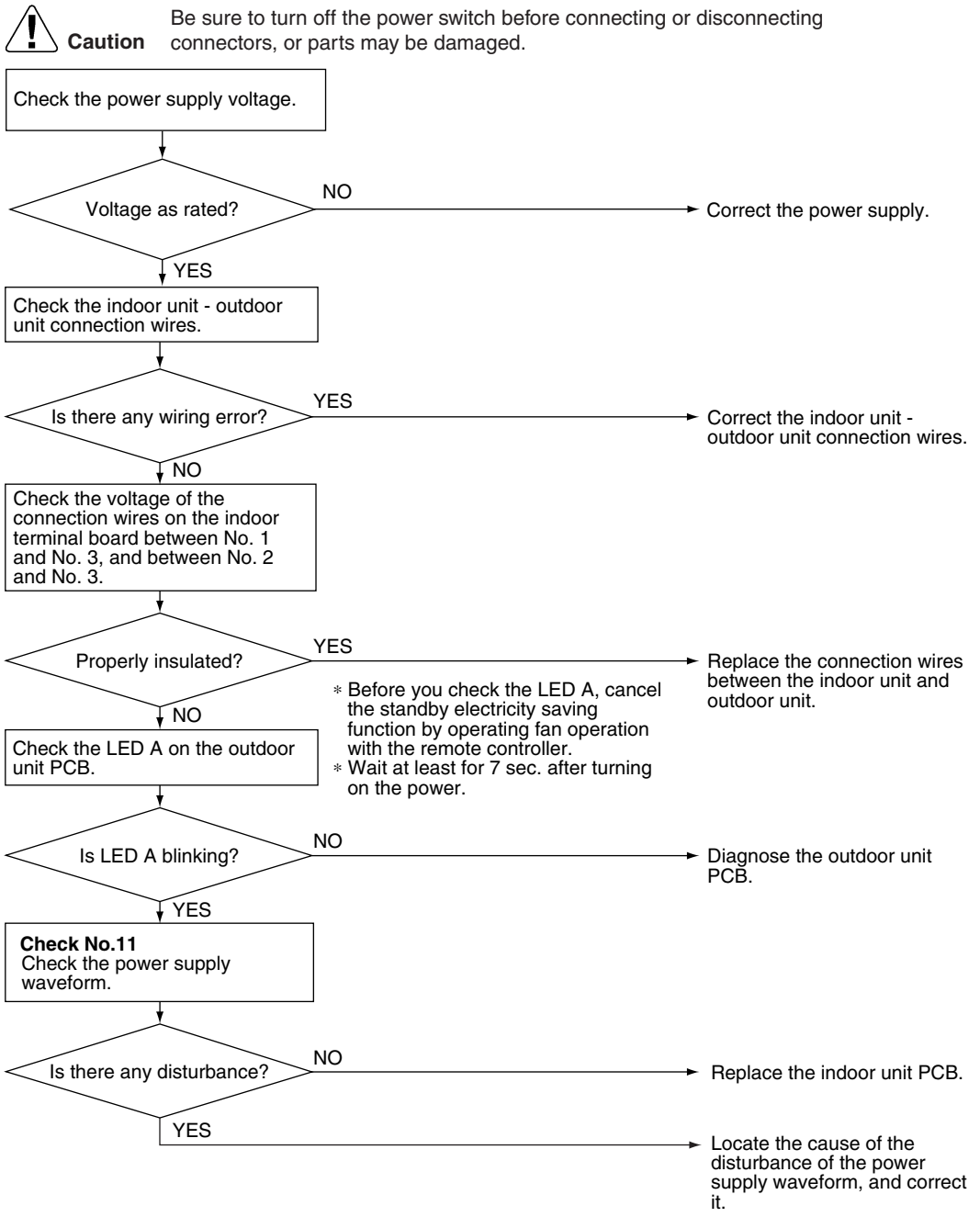
The data sent from the outdoor unit cannot be received normally, or the content of the data is abnormal.

Supposed Causes

- Reduction of power supply voltage
- Wiring error
- Breaking of the connection wires between the indoor and outdoor units (wire No. 3)
- Defective outdoor unit PCB
- Defective indoor unit PCB
- Disturbed power supply waveform

Troubleshooting

Check No.11
Refer to P.122


Caution
Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
Check the power supply voltage.
Voltage as rated?
NO
Correct the power supply.
YES
Check the indoor unit - outdoor unit connection wires.
Is there any wiring error?
YES
Correct the indoor unit - outdoor unit connection wires.
NO
Check the voltage of the connection wires on the indoor terminal board between No. 1 and No. 3, and between No. 2 and No. 3.
Properly insulated?
YES
Replace the connection wires between the indoor unit and outdoor unit.
NO
Check the LED A on the outdoor unit PCB.
* Before you check the LED A, cancel the standby electricity saving function by operating fan operation with the remote controller.
* Wait at least for 7 sec. after turning on the power.
Is LED A blinking?
NO
Diagnose the outdoor unit PCB.
YES
Check No.11
Check the power supply waveform.
Is there any disturbance?
NO
Replace the indoor unit PCB.
YES
Locate the cause of the disturbance of the power supply waveform, and correct it.
(R15198)

4.8 Unspecified Voltage (between Indoor Unit and Outdoor Unit)

Remote Controller Display

Method of Malfunction Detection

The supply power is detected for its requirements (different from pair type and multi type models) by the indoor / outdoor transmission signal.

Malfunction Decision Conditions

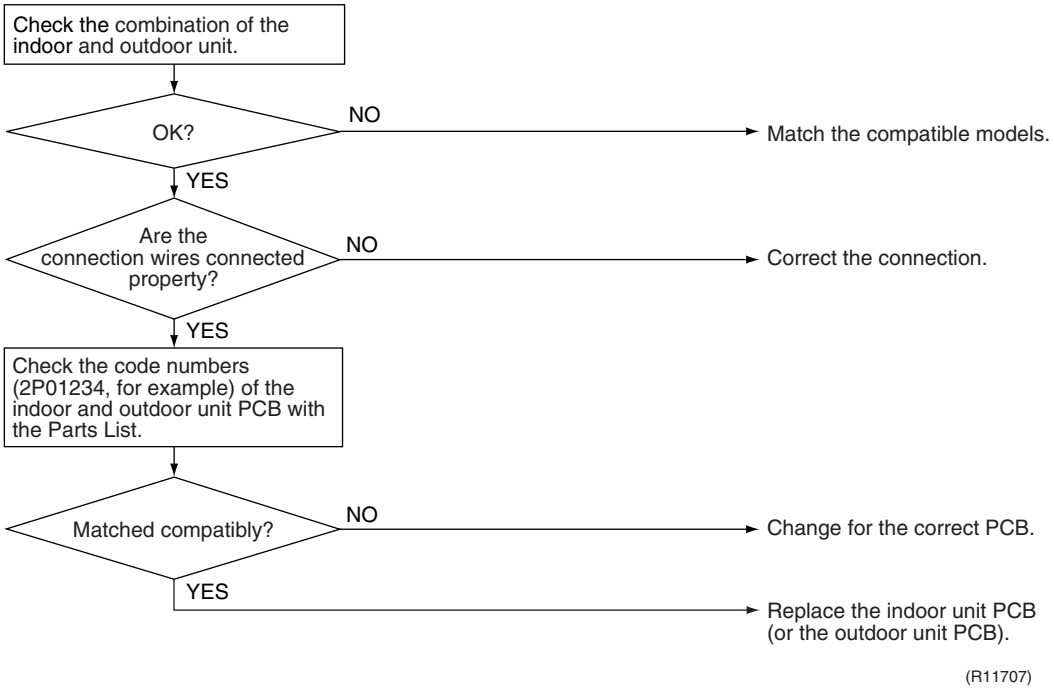
Pair type and multi type models are interconnected.

Supposed Causes

- Wrong models interconnected
- Wrong wiring of connecting wires
- Wrong indoor unit PCB or outdoor unit PCB mounted
- Defective indoor unit PCB
- Defective outdoor unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.


Check the combination of the indoor and outdoor unit.
OK?
NO
Match the compatible models.
YES
Are the connection wires connected property?
NO
Correct the connection.
YES
Check the code numbers (2P01234, for example) of the indoor and outdoor unit PCB with the Parts List.
Matched compatibly?
NO
Change for the correct PCB.
YES
Replace the indoor unit PCB (or the outdoor unit PCB).

(R11707)

4.9 Outdoor Unit PCB Abnormality

4.9.1 25/35 Class

Remote Controller Display

E1

Method of Malfunction Detection

- The system follows the microprocessor program as specified.
- The system checks to see if the zero-cross signal comes in properly.

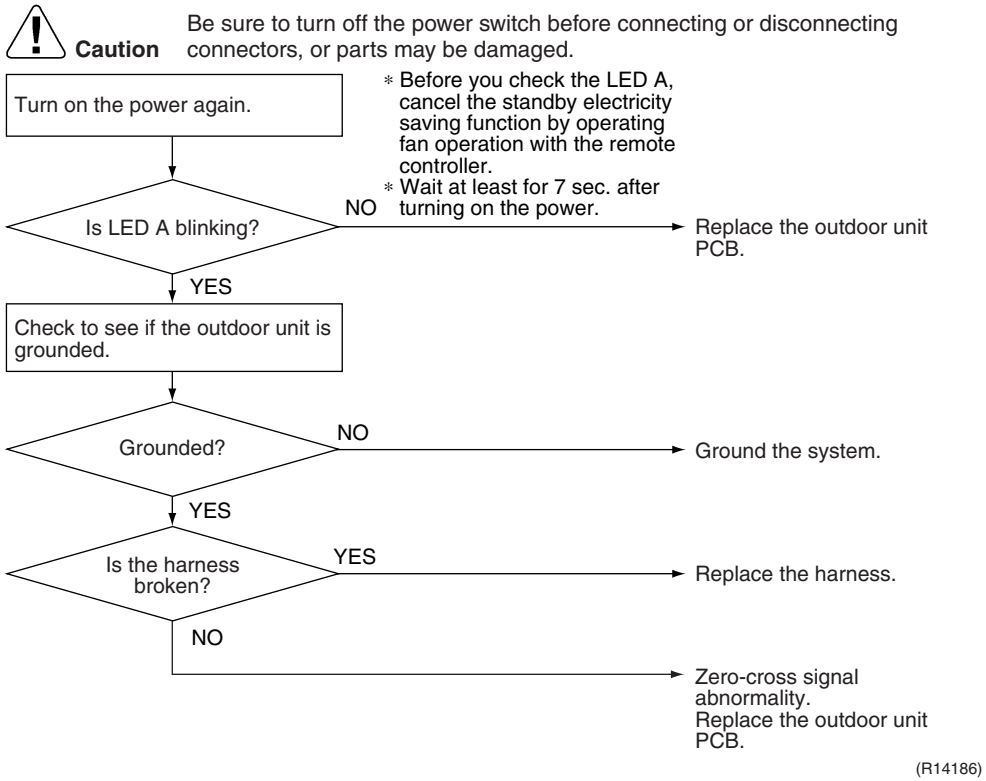
Malfunction Decision Conditions

- The microprocessor program runs out of control.
- The zero-cross signal is not detected.

Supposed Causes

- Defective outdoor unit PCB
- Broken harness between PCBs
- Noise
- Momentary fall of voltage
- Momentary power failure, etc

Troubleshooting


Caution
Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
Turn on the power again.
* Before you check the LED A, cancel the standby electricity saving function by operating fan operation with the remote controller.
* Wait at least for 7 sec. after turning on the power.
Is LED A blinking?
NO
Replace the outdoor unit PCB.
YES
Check to see if the outdoor unit is grounded.
Grounded?
NO
Ground the system.
YES
Is the harness broken?
YES
Replace the harness.
NO
Zero-cross signal abnormality.
Replace the outdoor unit PCB.

(R14186)

4.9.2 50 Class

Remote Controller Display

E1

Method of Malfunction Detection

- Detection within the program of the microcomputer

Malfunction Decision Conditions

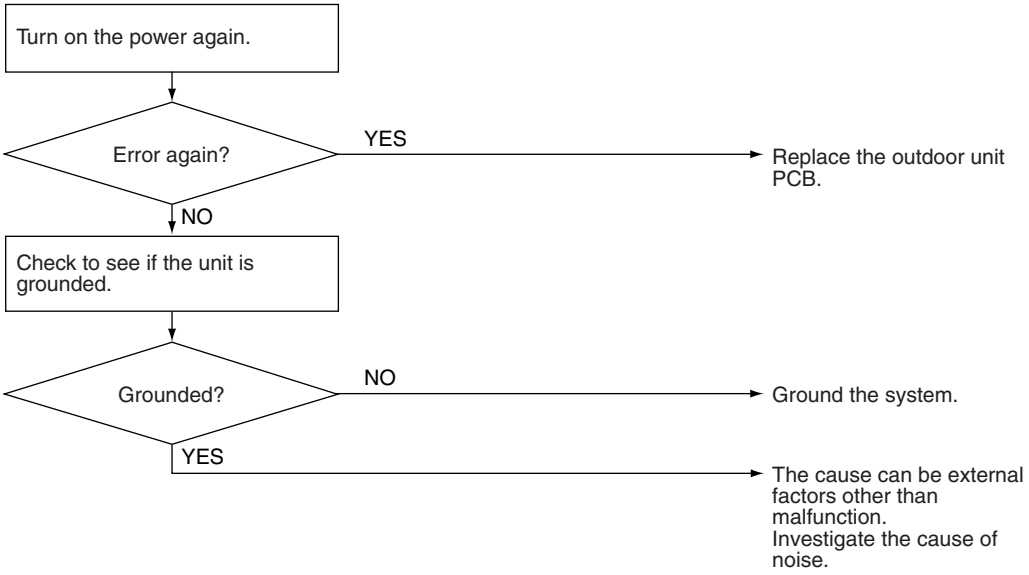
- The program of the microcomputer is in abnormal running order.

Supposed Causes

- Defective outdoor unit PCB
- Noise
- Momentary fall of voltage
- Momentary power failure

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R7183)

4.10 OL Activation (Compressor Overload)

Remote Controller Display

E5

Method of Malfunction Detection

A compressor overload is detected through compressor OL.

Malfunction Decision Conditions

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

∗ The operating temperature condition is not specified.

Supposed Causes

- Defective discharge pipe thermistor
- Defective outdoor electronic expansion valve or coil
- Defective four way valve or coil
- Defective outdoor unit PCB
- Refrigerant shortage
- Water mixed in refrigerant
- Defective stop valve

Troubleshooting

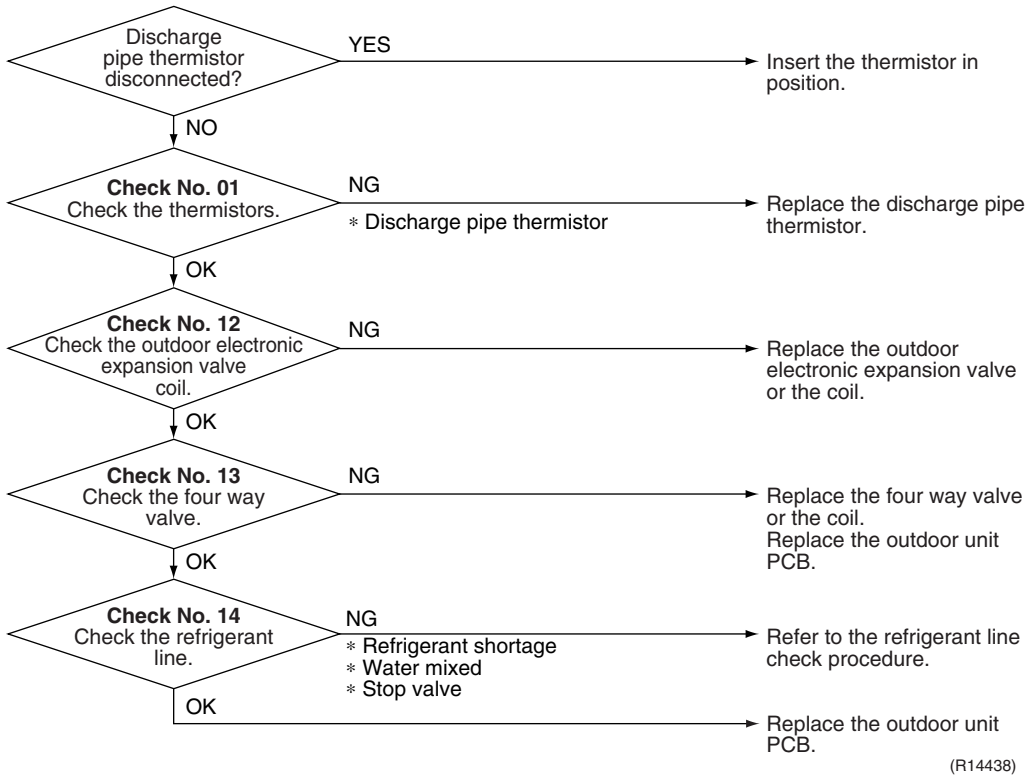
Check No.01
Refer to P.121

Check No.12
Refer to P.123

Check No.13
Refer to P.124

Check No.14
Refer to P.124

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R14438)

4.11 Compressor Lock

Remote Controller Display

E6

Method of Malfunction Detection

A compressor lock is detected by checking the compressor running condition through the position detection circuit.

Malfunction Decision Conditions

<25/35 class>

- Operation stops due to overcurrent.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes without any other error

<50 class>

- A compressor lock is detected by the current waveform generated when applying high-frequency voltage to the motor.
- If the error repeats, the system is shut down
- Reset condition: Continuous run for about 5 minutes without any other error

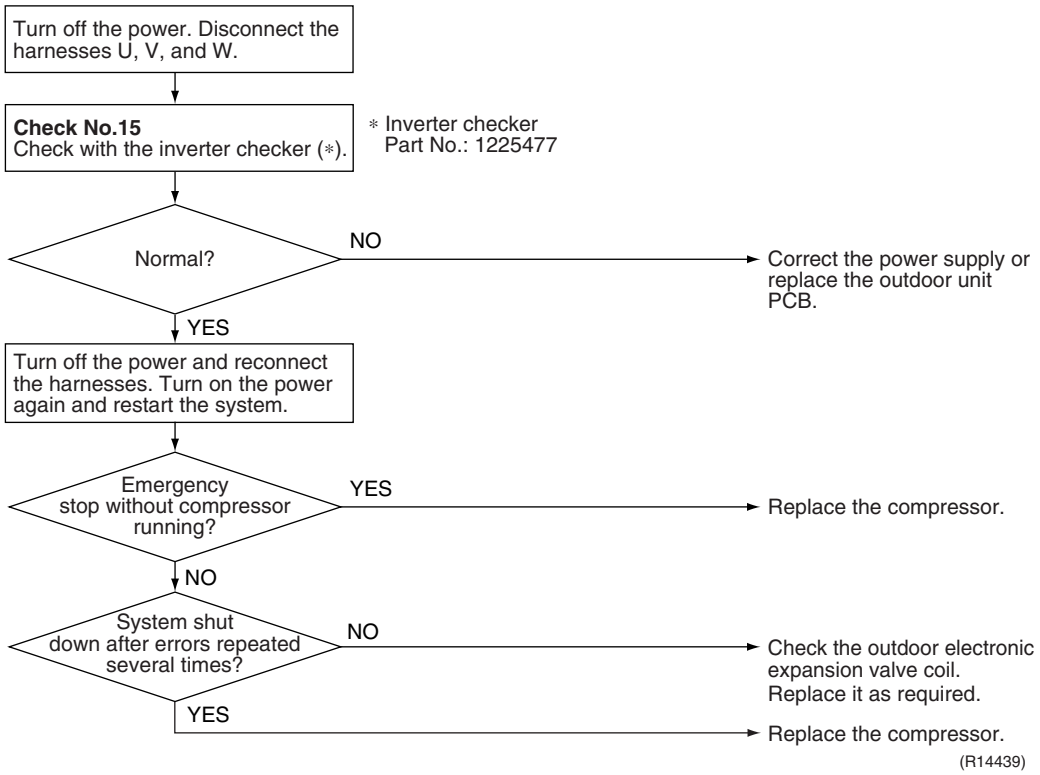
Supposed Causes

- Compressor locked
- Compressor harness disconnected

Troubleshooting

Check No.15
Refer to P.125

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
(Precaution before turning on the power again)
Make sure the power has been off for at least 30 seconds.


Turn off the power. Disconnect the harnesses U, V, and W.
Check No.15
Check with the inverter checker (*).
* Inverter checker
Part No.: 1225477
Normal?
NO
Correct the power supply or replace the outdoor unit PCB.
YES
Turn off the power and reconnect the harnesses. Turn on the power again and restart the system.
Emergency stop without compressor running?
YES
Replace the compressor.
NO
System shut down after errors repeated several times?
NO
Check the outdoor electronic expansion valve coil. Replace it as required.
YES
Replace the compressor.

(R14439)

4.12 DC Fan Lock

Remote Controller Display

E7

Method of Malfunction Detection

An error is determined with the high-voltage fan motor rotation speed detected by the Hall IC.

Malfunction Decision Conditions

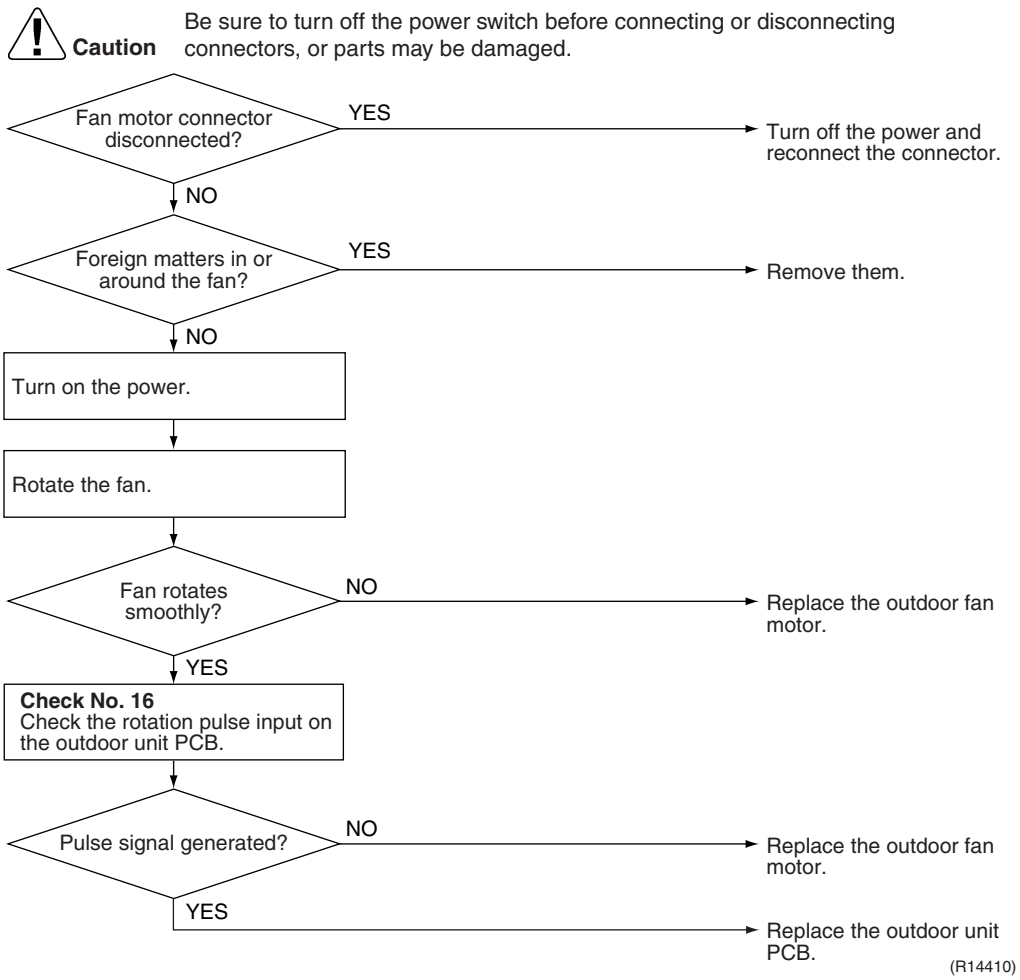
- The fan does not start in 15 ~ 30 seconds (depending on the model) even when the fan motor is running.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes (50 class: 5 minutes) without any other error

Supposed Causes

- Disconnection of the fan motor
- Foreign matters stuck in the fan
- Defective fan motor
- Defective outdoor unit PCB

Troubleshooting

Check No.16
Refer to P.127



4.13 Input Overcurrent Detection

Remote Controller Display

E8

Method of Malfunction Detection

An input overcurrent is detected by checking the input current value with the compressor running.

Malfunction Decision Conditions

- The following current with the compressor running continues for 2.5 seconds.
  Cooling / Heating: Above 9.25 ~ 20 A (depending on the model)
- The upper limit of the current decreases when the outdoor temperature exceeds a certain level.

Supposed Causes

- Defective compressor
- Defective power module
- Defective outdoor unit PCB
- Short circuit

Troubleshooting

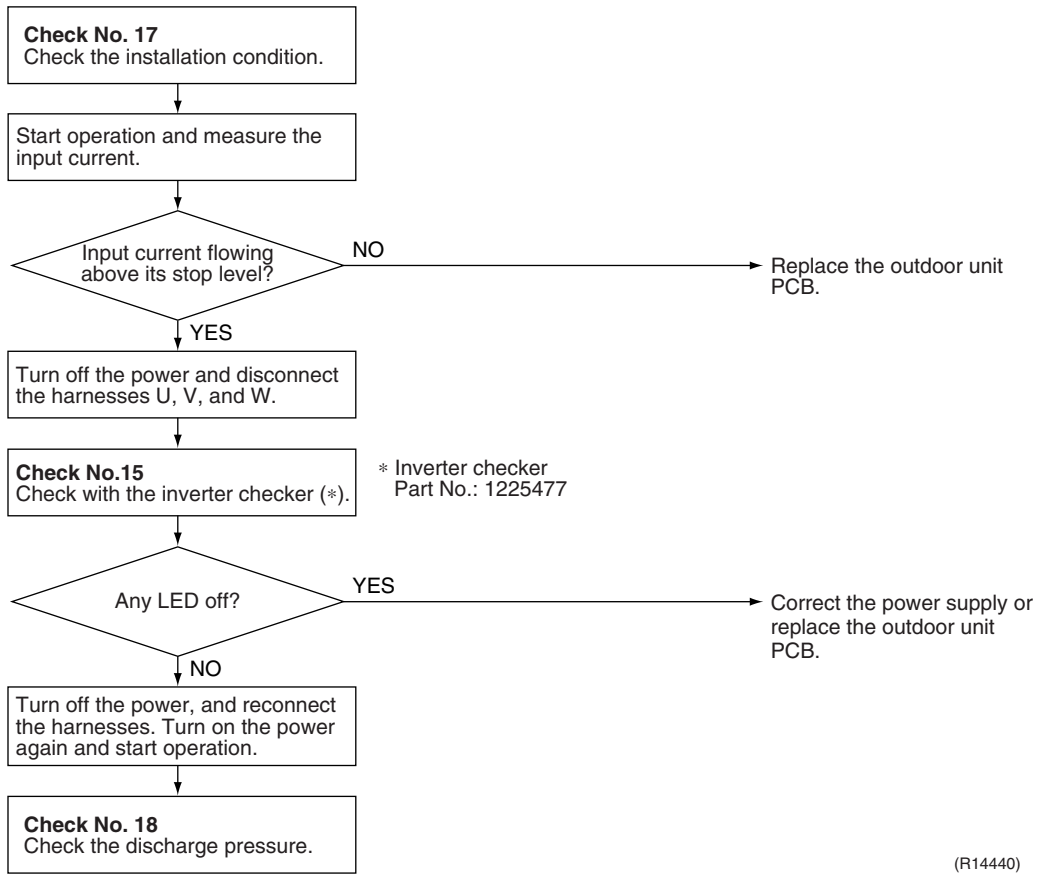
Check No.15
Refer to P.125

Check No.17
Refer to P.128

Check No.18
Refer to P.128

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

∗ An input overcurrent may result from wrong internal wiring. If the system is interrupted by an input overcurrent after the wires have been disconnected and reconnected for part replacement, check the wiring again.


Check No. 17
Check the installation condition.
Start operation and measure the input current.
Input current flowing above its stop level?
NO
Replace the outdoor unit PCB.
YES
Turn off the power and disconnect the harnesses U, V, and W.
Check No.15
Check with the inverter checker (∗).
∗ Inverter checker
Part No.: 1225477
Any LED off?
YES
Correct the power supply or replace the outdoor unit PCB.
NO
Turn off the power, and reconnect the harnesses. Turn on the power again and start operation.
Check No. 18
Check the discharge pressure.

(R14440)

4.14 Four Way Valve Abnormality

Remote Controller Display

E9

Method of Malfunction Detection

The room temperature thermistor, the indoor heat exchanger thermistor, the outdoor temperature thermistor, and the outdoor heat exchanger thermistor are checked if they function within their normal ranges in each operation mode.

Malfunction Decision Conditions

A following condition continues over 1 ~ 10 minutes (depending on the model) after operating for 5 ~ 10 minutes (depending on the model).

- Cooling / Dry
  (room thermistor temp. – indoor heat exchanger temp.) < –5°C
- Heating
  (indoor heat exchanger temp. – room thermistor temp.) < –5°C

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

- Disconnection of four way valve coil
- Defective four way valve, coil, or harness
- Defective outdoor unit PCB
- Defective thermistor
- Refrigerant shortage
- Water mixed in refrigerant
- Defective stop valve

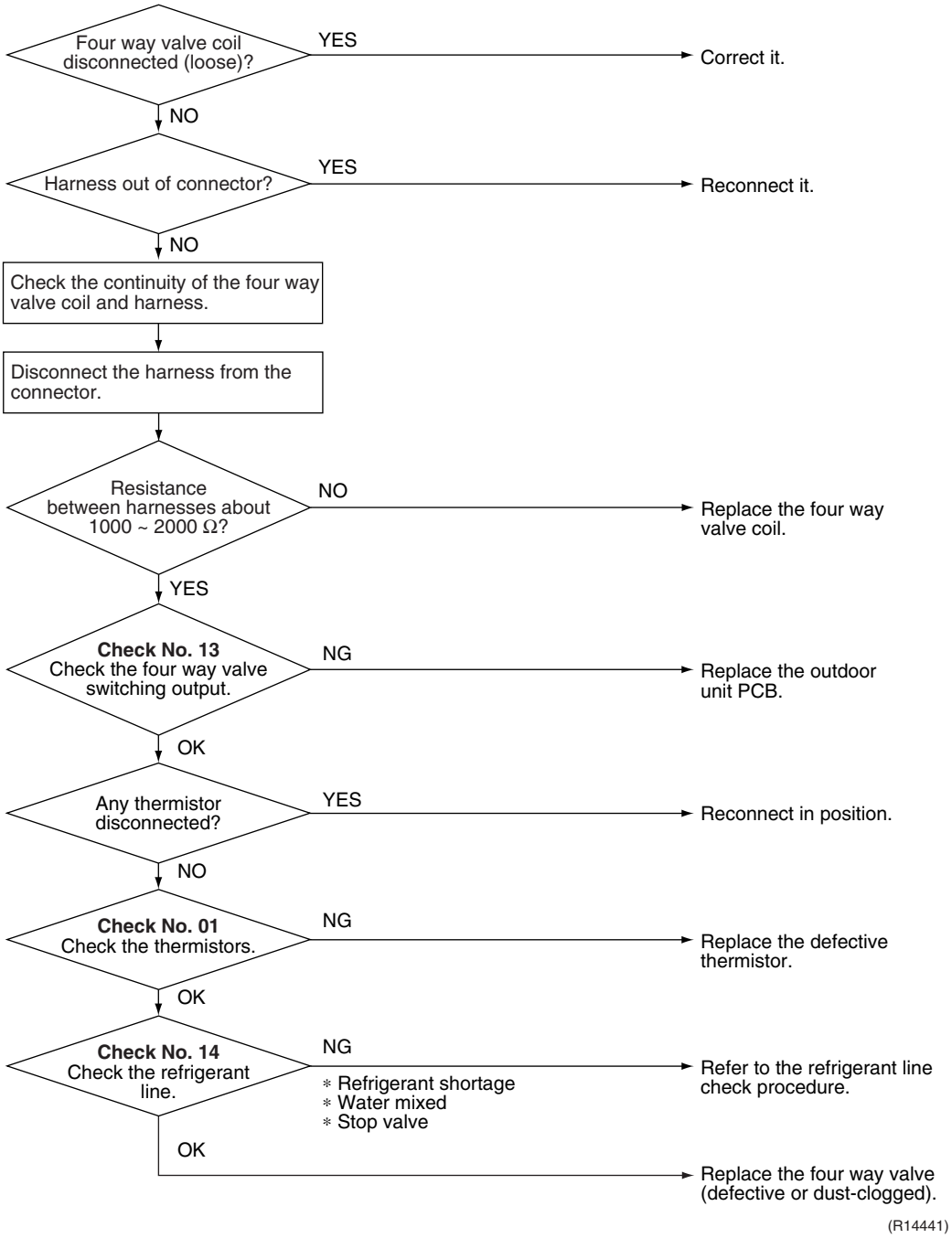
Troubleshooting

Check No.01
Refer to P.121

Check No.13
Refer to P.124

Check No.14
Refer to P.124

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R14441)

4.15 Discharge Pipe Temperature Control

Remote Controller Display

F3

Method of Malfunction Detection

An error is determined with the temperature detected by the discharge pipe thermistor.

Malfunction Decision Conditions

- If the temperature detected by the discharge pipe thermistor rises above **A** °C, the compressor stops.
- The error is cleared when the discharge pipe temperature has dropped below **B** °C.

<25/35 class>

Stop temperatures	**A** (°C)	**B** (°C)
(1) above 45 Hz (rising), above 40 Hz (dropping)	110	97
(2) 30 ~ 45 Hz (rising), 25 ~ 40 Hz (dropping)	105	92
(3) below 30 Hz (rising), below 25 Hz (dropping)	99	86

<50 class>

A (°C)	**B** (°C)
110	95

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

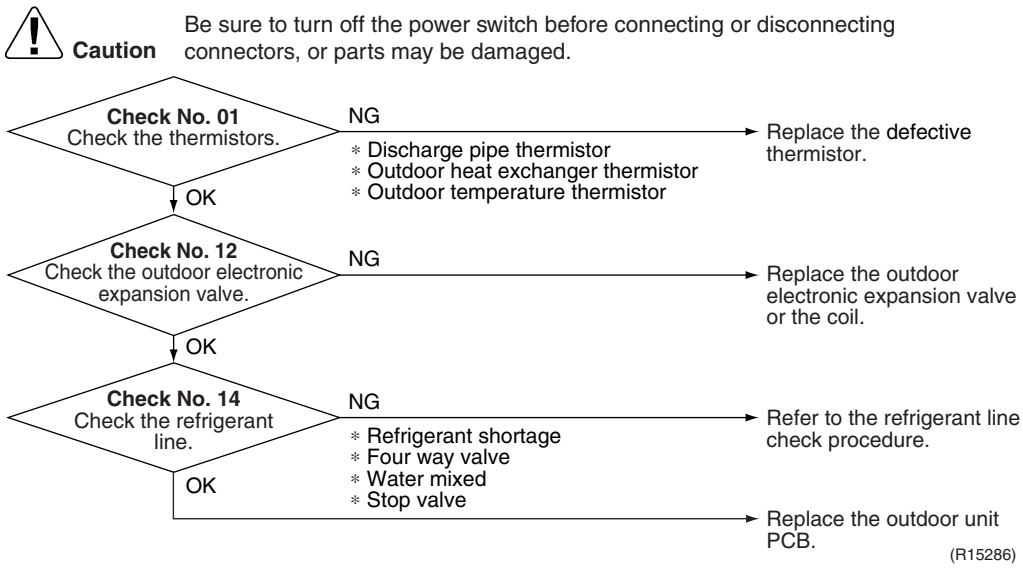
- Defective discharge pipe thermistor
  (Defective outdoor heat exchanger thermistor or outdoor temperature thermistor)
- Defective outdoor electronic expansion valve or coil
- Refrigerant shortage
- Defective four way valve
- Water mixed in refrigerant
- Defective stop valve
- Defective outdoor unit PCB

Troubleshooting

Check No.01
Refer to P.121

Check No.12
Refer to P.123

Check No.14
Refer to P.124



4.16 High Pressure Control in Cooling

Remote Controller Display

F6

Method of Malfunction Detection

High-pressure control (operation halt, frequency drop, etc.) is activated in cooling operation if the temperature sensed by the outdoor heat exchanger thermistor exceeds the limit.

Malfunction Decision Conditions

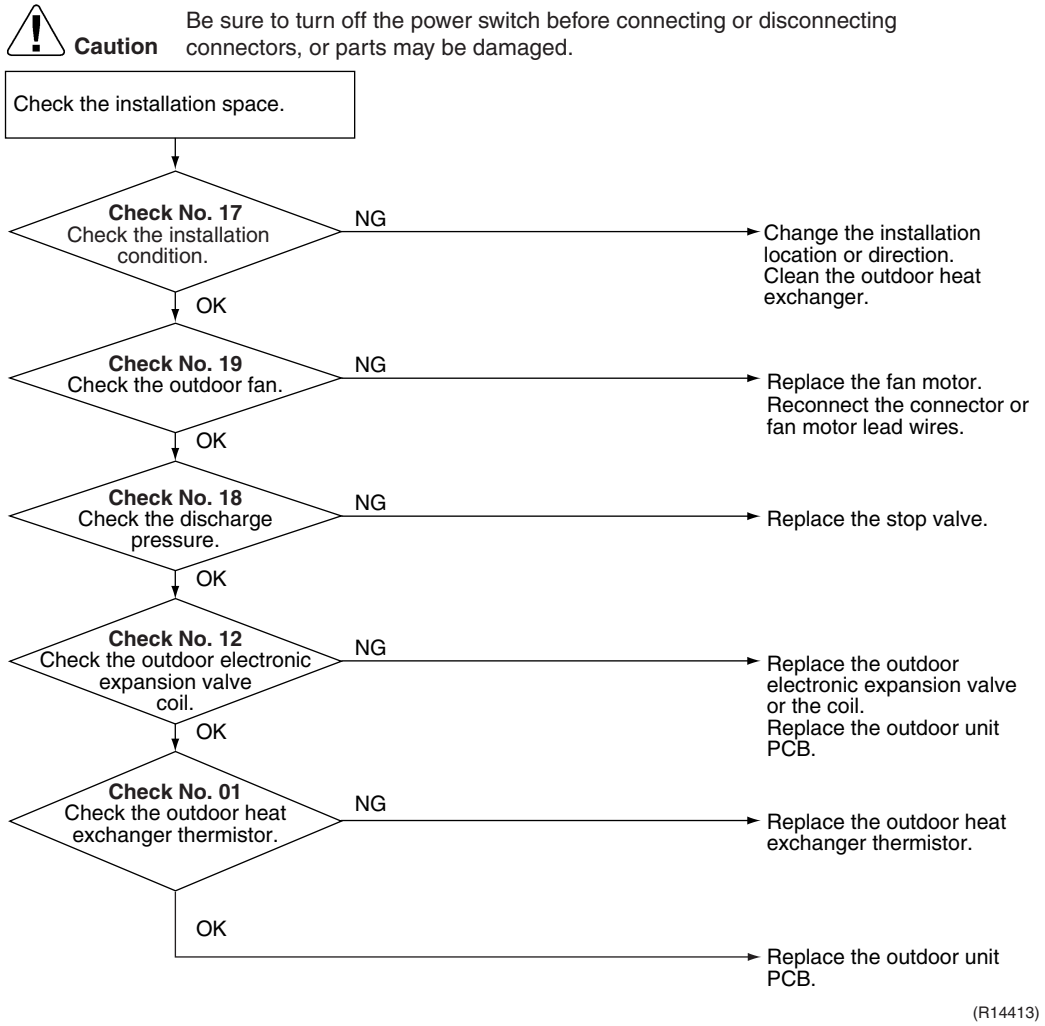
- The temperature sensed by the outdoor heat exchanger thermistor rises above about 65°C.
- The error is cleared when the temperature drops below about 50°C.

Supposed Causes

- The installation space is not large enough.
- Dirty outdoor heat exchanger
- Defective outdoor fan motor
- Defective stop valve
- Defective outdoor electronic expansion valve or coil
- Defective outdoor heat exchanger thermistor
- Defective outdoor unit PCB

Troubleshooting

Check No.01 Refer to P.121
Check No.12 Refer to P.123
Check No.17 Refer to P.128
Check No.18 Refer to P.128
Check No.19 Refer to P.129


Caution
Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
Check the installation space.
Check No. 17 Check the installation condition.
NG
Change the installation location or direction. Clean the outdoor heat exchanger.
OK
Check No. 19 Check the outdoor fan.
NG
Replace the fan motor. Reconnect the connector or fan motor lead wires.
OK
Check No. 18 Check the discharge pressure.
NG
Replace the stop valve.
OK
Check No. 12 Check the outdoor electronic expansion valve coil.
NG
Replace the outdoor electronic expansion valve or the coil. Replace the outdoor unit PCB.
OK
Check No. 01 Check the outdoor heat exchanger thermistor.
NG
Replace the outdoor heat exchanger thermistor.
OK
Replace the outdoor unit PCB.

(R14413)

4.17 Compressor System Sensor Abnormality

4.17.1 25/35 Class

Remote Controller Display

H07

Method of Malfunction Detection

- The system checks the DC current before the compressor starts.

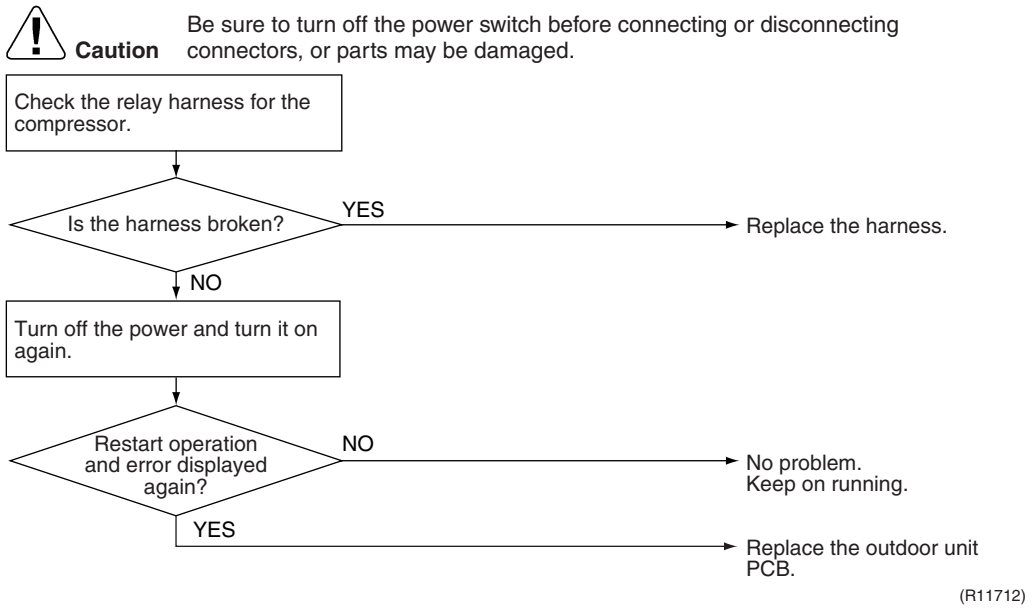
Malfunction Decision Conditions

- The DC current before compressor start-up is out of the range 0.5 ~ 4.5 V (sensor output converted to voltage value)
- The DC voltage before compressor start-up is below 50 V.

Supposed Causes

- Broken or disconnected harness
- Defective outdoor unit PCB

Troubleshooting


Caution
Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
Check the relay harness for the compressor.
Is the harness broken?
YES
Replace the harness.
NO
Turn off the power and turn it on again.
Restart operation and error displayed again?
NO
No problem. Keep on running.
YES
Replace the outdoor unit PCB.
(R11712)

4.17.2 50 Class

Remote Controller Display

H07

Method of Malfunction Detection

- The system checks the power supply voltage and the DC voltage before the compressor starts.
- The system checks the compressor current right after the compressor starts.

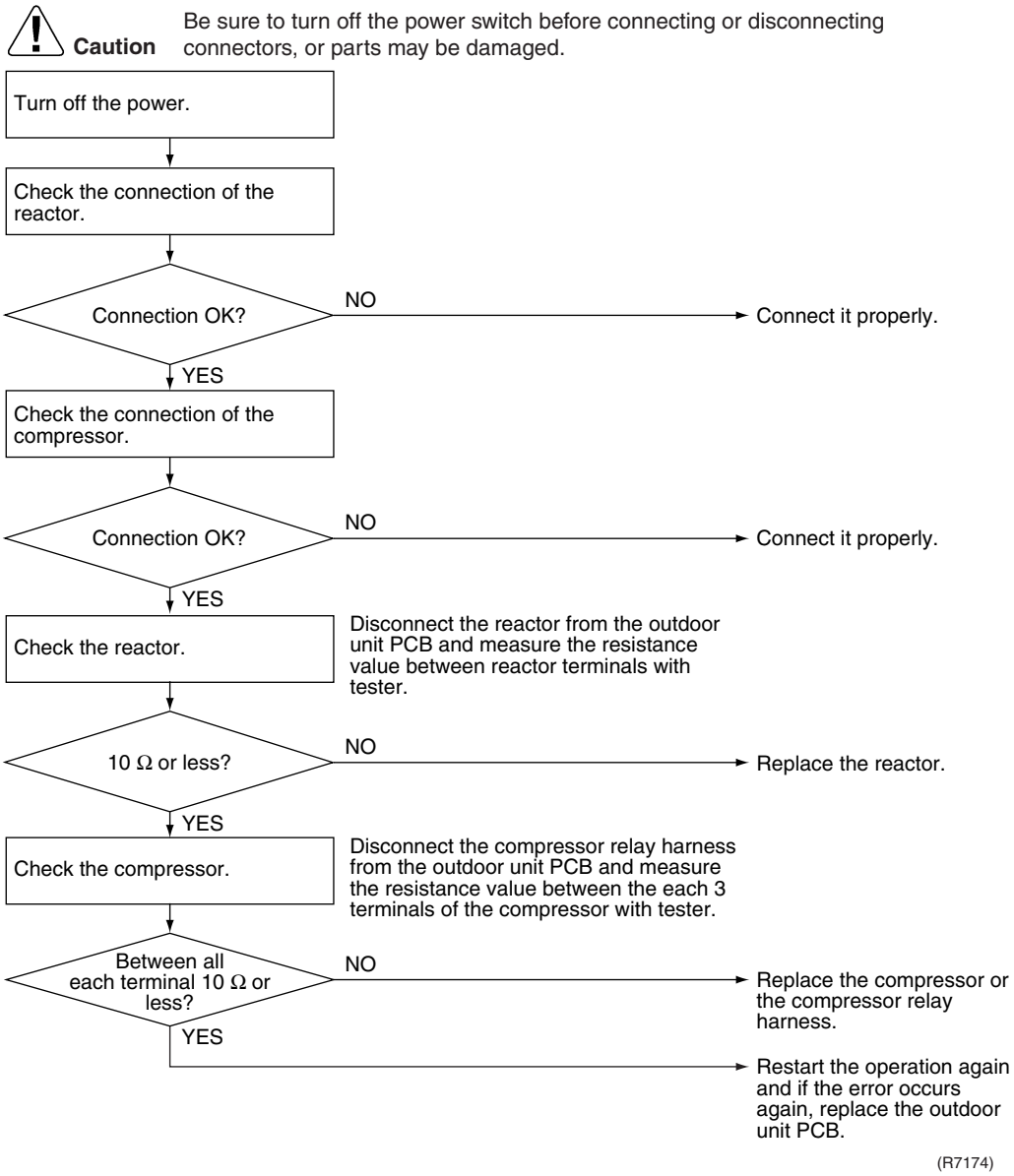
Malfunction Decision Conditions

- The power supply voltage and the DC voltage is obviously low or high.
- The compressor current does not run when the compressor starts.

Supposed Causes

- Disconnection of reactor
- Disconnection of compressor harness
- Defective outdoor unit PCB
- Defective compressor

Troubleshooting


Caution
Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
Turn off the power.
Check the connection of the reactor.
Connection OK?
NO
Connect it properly.
YES
Check the connection of the compressor.
Connection OK?
NO
Connect it properly.
YES
Check the reactor.
Disconnect the reactor from the outdoor unit PCB and measure the resistance value between reactor terminals with tester.
10 Ω or less?
NO
Replace the reactor.
YES
Check the compressor.
Disconnect the compressor relay harness from the outdoor unit PCB and measure the resistance value between the each 3 terminals of the compressor with tester.
Between all each terminal 10 Ω or less?
NO
Replace the compressor or the compressor relay harness.
YES
Restart the operation again and if the error occurs again, replace the outdoor unit PCB.
(R7174)

4.18 Position Sensor Abnormality

Remote Controller Display

H6

Method of Malfunction Detection

A compressor start-up failure is detected by checking the compressor running condition through the position detection circuit.

Malfunction Decision Conditions

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes (50 class: 5 minutes) without any other error

Supposed Causes

- Disconnection of the compressor relay cable
- Defective compressor
- Defective outdoor unit PCB
- Start-up failure caused by the closed stop valve
- Input voltage is outside the specified range

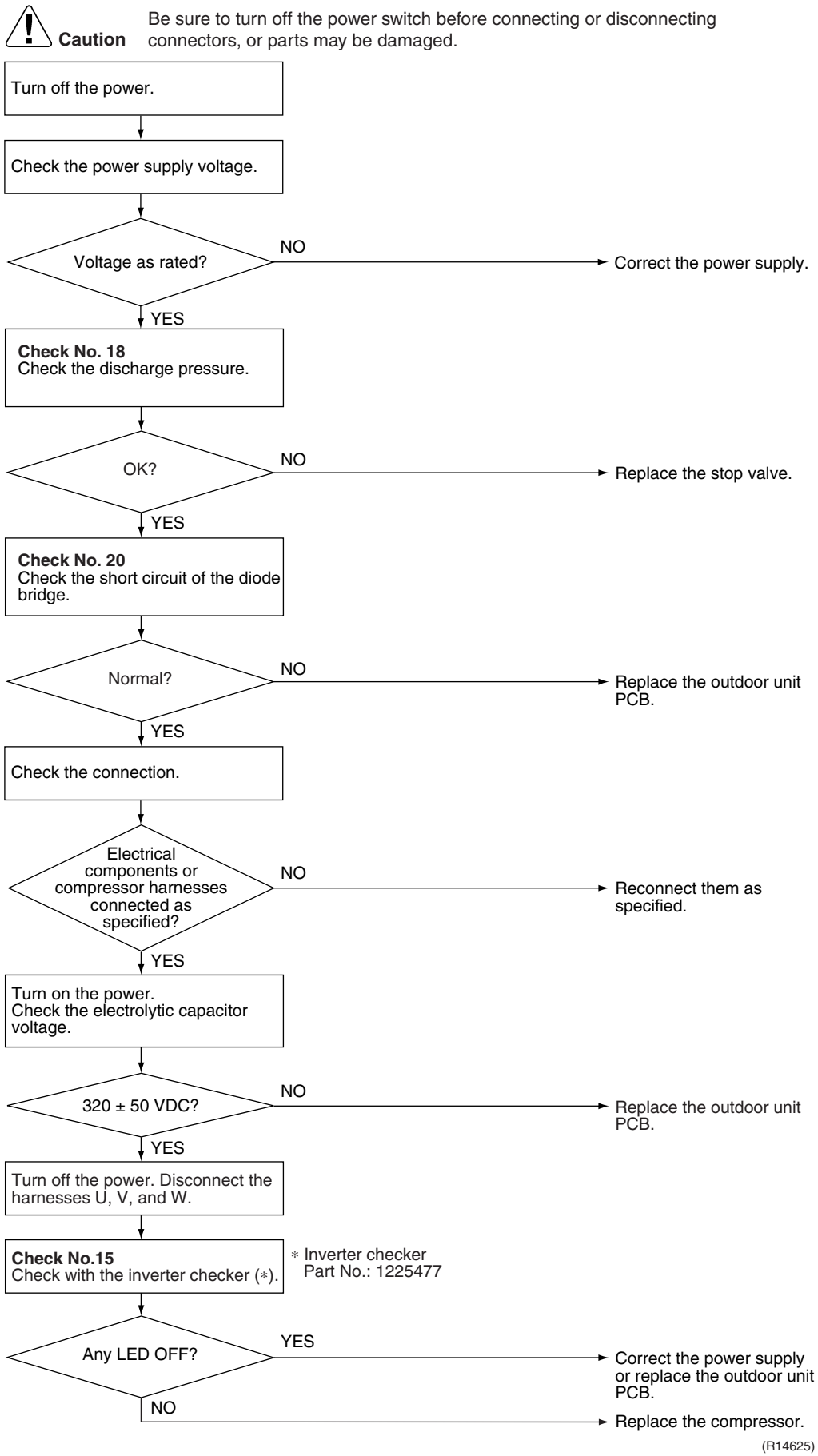
Troubleshooting

25/35 class

Check No.15
Refer to P.125

Check No.18
Refer to P.128

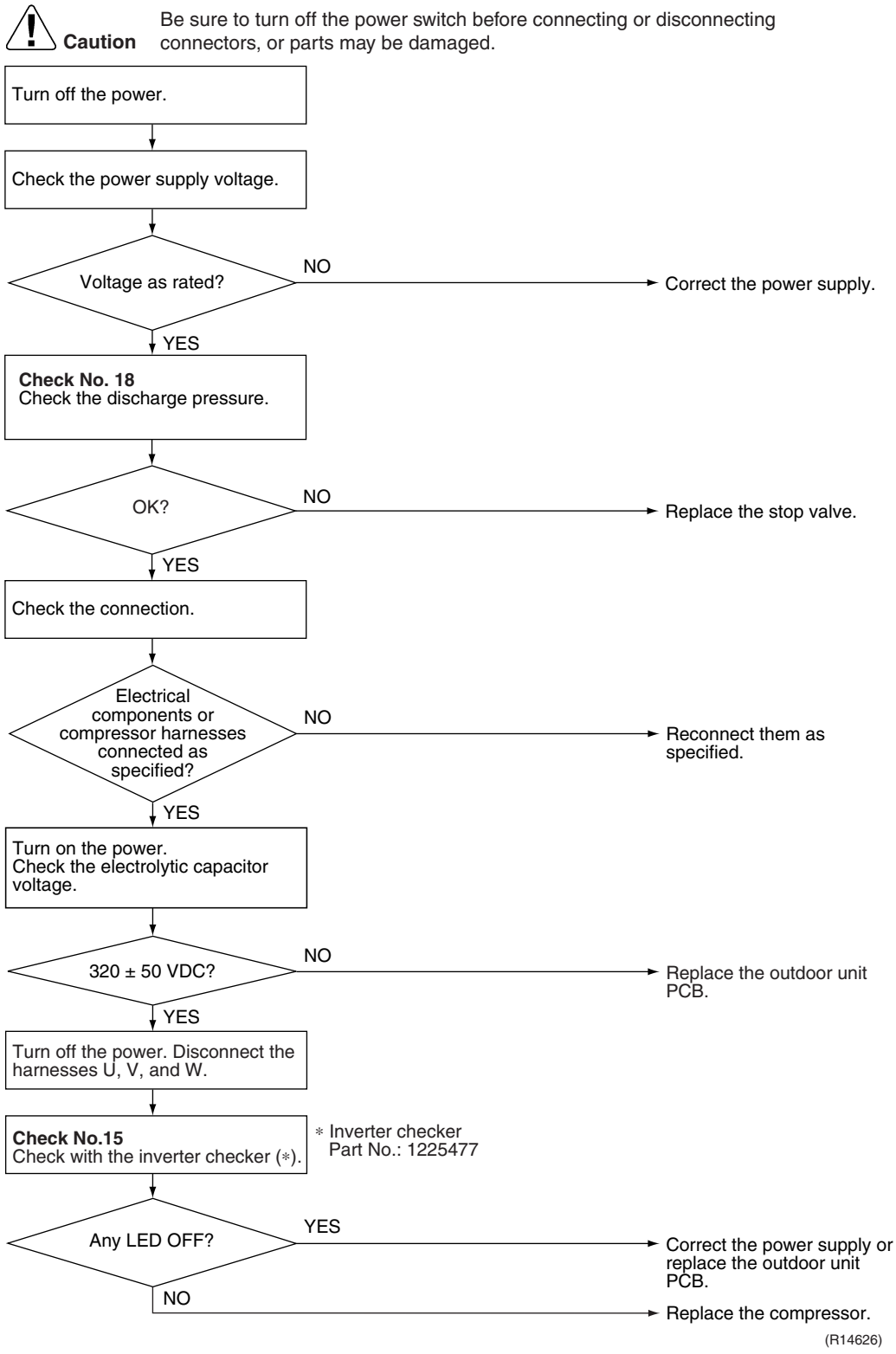
Check No.20
Refer to P.129



Troubleshooting 50 class

Check No.15
Refer to P.125

Check No.18
Refer to P.128



4.19 DC Voltage / Current Sensor Abnormality (25/35 Class)

Remote Controller Display

H8

Method of Malfunction Detection

DC voltage or DC current sensor abnormality is identified based on the compressor running frequency and the input current.

Malfunction Decision Conditions

- The compressor running frequency is above 52 Hz.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

- Defective outdoor unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

Replace the outdoor unit PCB.

4.20 CT or Related Abnormality (50 Class)

Remote Controller Display

H8

Method of Malfunction Detection

A CT or related error is detected by checking the compressor running frequency and CT-detected input current.

Malfunction Decision Conditions

- The compressor running frequency is more than 55 Hz, and the CT input current is below 0.5 A.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

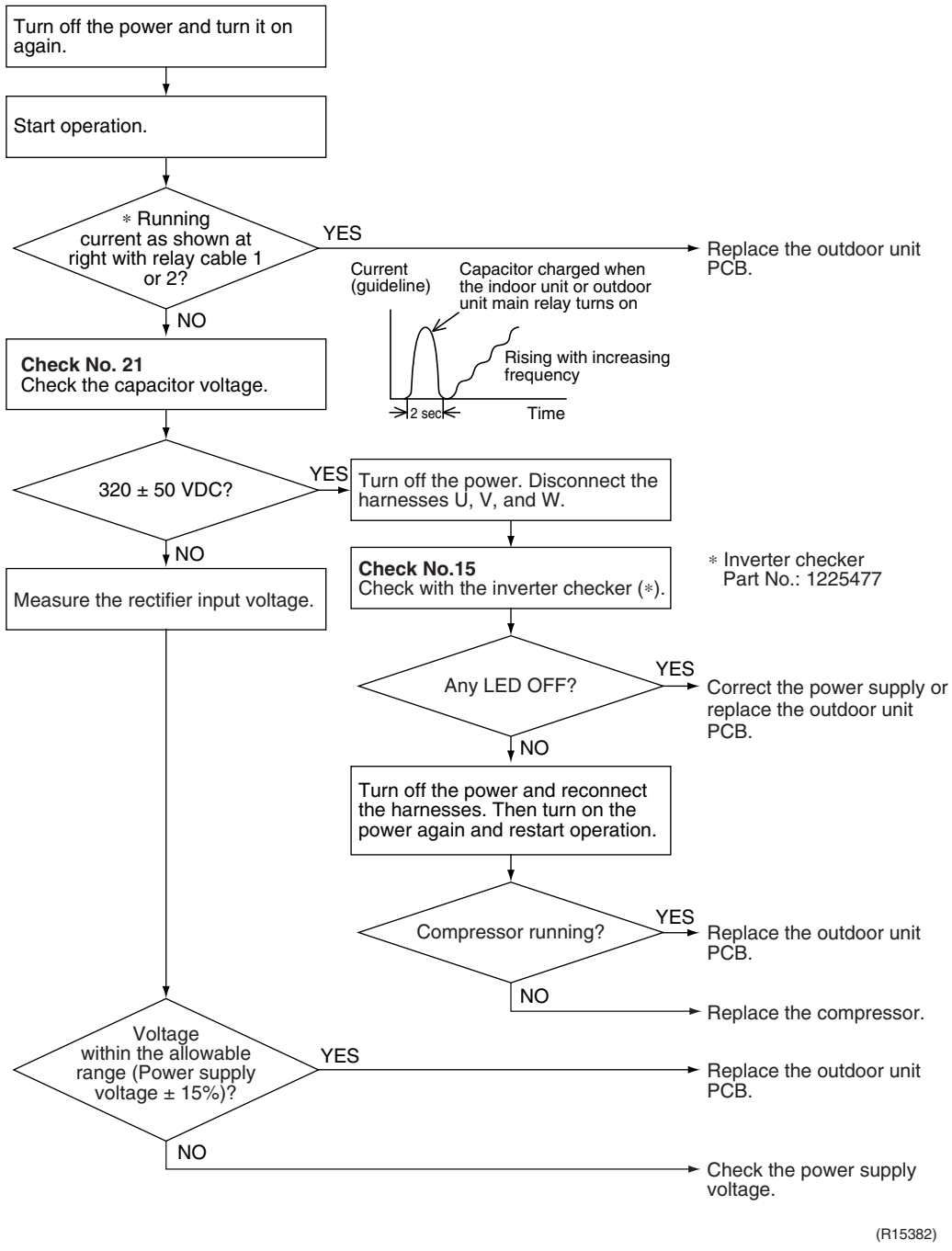
- Defective power module
- Breakage of wiring or disconnection
- Defective reactor
- Defective outdoor unit PCB

Troubleshooting

Check No.15
Refer to P.125

Check No.21
Refer to P.130

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.


Turn off the power and turn it on again.
Start operation.
* Running current as shown at right with relay cable 1 or 2?
YES
Replace the outdoor unit PCB.
NO
Current (guideline)
Capacitor charged when the indoor unit or outdoor unit main relay turns on
Rising with increasing frequency
2 sec
Time
Check No. 21
Check the capacitor voltage.
320 ± 50 VDC?
YES
Turn off the power. Disconnect the harnesses U, V, and W.
NO
Check No.15
Check with the inverter checker (*).
* Inverter checker Part No.: 1225477
Measure the rectifier input voltage.
Any LED OFF?
YES
Correct the power supply or replace the outdoor unit PCB.
NO
Turn off the power and reconnect the harnesses. Then turn on the power again and restart operation.
Compressor running?
YES
Replace the outdoor unit PCB.
NO
Replace the compressor.
Voltage within the allowable range (Power supply voltage ± 15%)?
YES
Replace the outdoor unit PCB.
NO
Check the power supply voltage.

(R15382)

4.21 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display

H9, J3, J6, P4

Method of Malfunction Detection

This fault is identified based on the thermistor input voltage to the microcomputer.
A thermistor fault is identified based on the temperature sensed by each thermistor.

Malfunction Decision Conditions

- The thermistor input voltage is above 4.96 V or below 0.04 V with the power on.
- J3 error is judged if the discharge pipe temperature is lower than the heat exchanger temperature.

Supposed Causes

- Disconnection of the connector for the thermistor
- Defective thermistor corresponding to the error code
- Defective heat exchanger thermistor in the case of J3 error (outdoor heat exchanger thermistor in cooling operation, or indoor heat exchanger thermistor in heating operation)
- Defective outdoor unit PCB

Troubleshooting

In case of "P4"

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

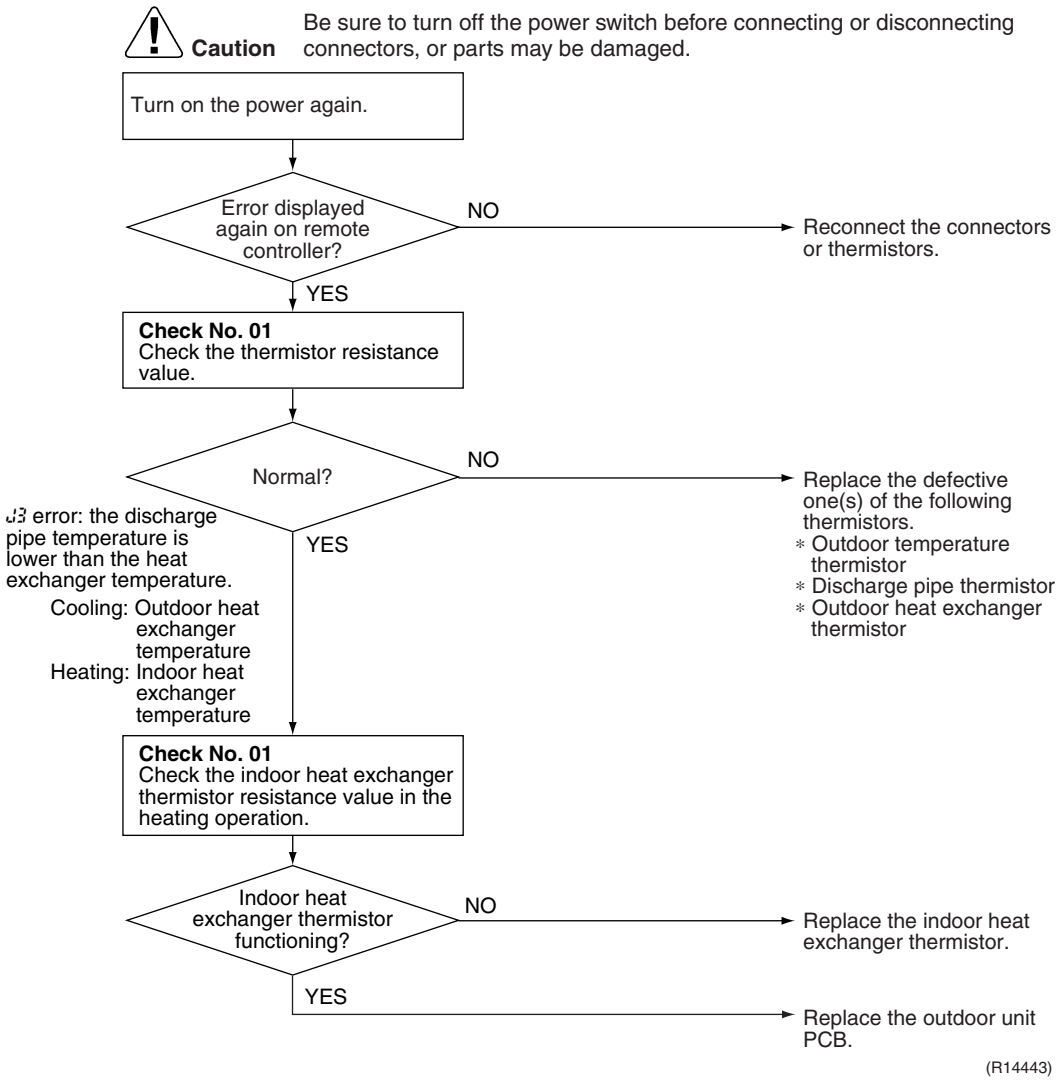
Replace the outdoor unit PCB.

P4 : Radiation fin thermistor

Troubleshooting

Check No.01
Refer to P.121

In case of "H9" "J3" "J6"


Caution
Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
Turn on the power again.
Error displayed again on remote controller?
NO
Reconnect the connectors or thermistors.
YES
Check No. 01
Check the thermistor resistance value.
Normal?
NO
Replace the defective one(s) of the following thermistors.
∗ Outdoor temperature thermistor
∗ Discharge pipe thermistor
∗ Outdoor heat exchanger thermistor
J3 error: the discharge pipe temperature is lower than the heat exchanger temperature.
Cooling: Outdoor heat exchanger temperature
Heating: Indoor heat exchanger temperature
YES
Check No. 01
Check the indoor heat exchanger thermistor resistance value in the heating operation.
Indoor heat exchanger thermistor functioning?
NO
Replace the indoor heat exchanger thermistor.
YES
Replace the outdoor unit PCB.
(R14443)

H9 : Outdoor temperature thermistor
J3 : Discharge pipe thermistor
J6 : Outdoor heat exchanger thermistor

4.22 Electrical Box Temperature Rise

Remote Controller Display

L3

Method of Malfunction Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Malfunction Decision Conditions

- With the compressor off, the radiation fin temperature is above **A** °C.
- The error is cleared when the radiation fin temperature drops below **B** °C.
- To cool the electrical components, the outdoor fan starts when the radiation fin temperature rises above **C** °C and stops when it drops below **B** °C.

	A (°C)	**B** (°C)	**C** (°C)
25/35 class	98	75	83
50 class	95	80	85

Supposed Causes

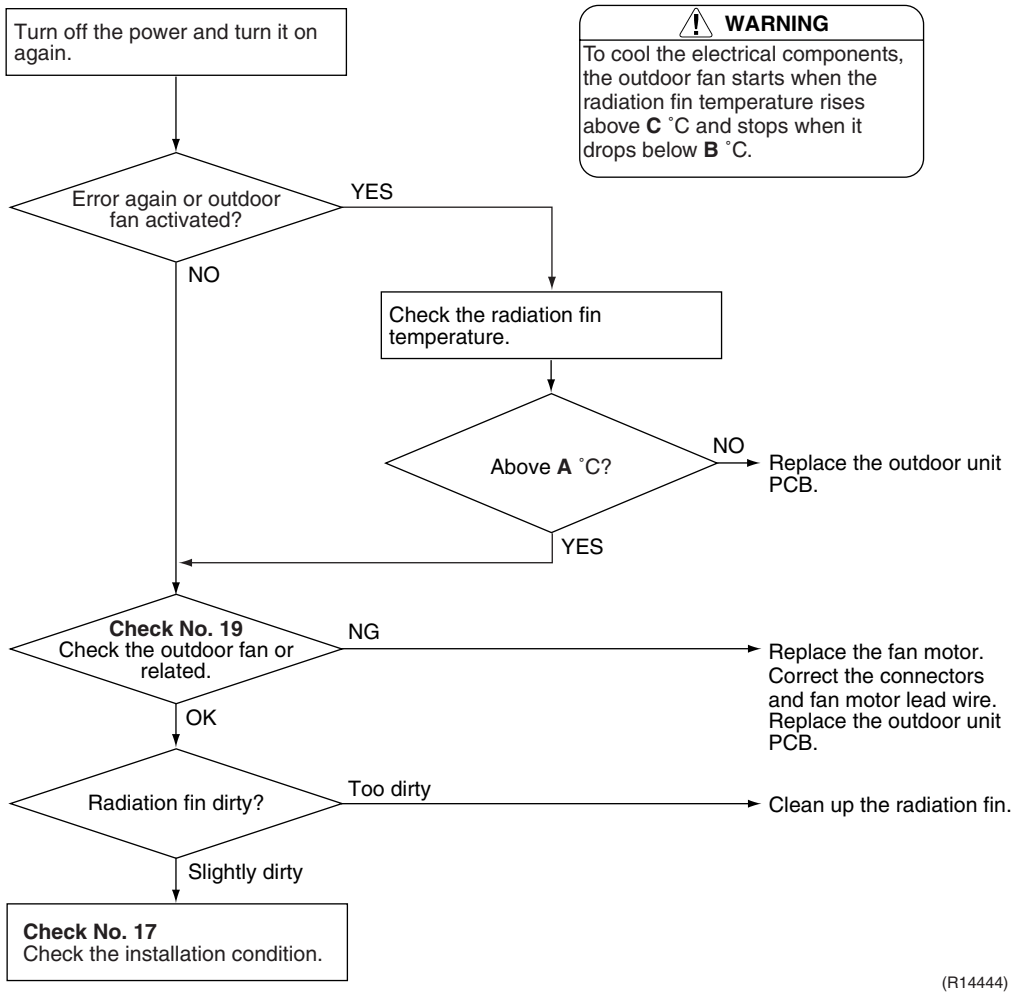
- Defective outdoor fan motor
- Short circuit
- Defective radiation fin thermistor
- Disconnection of connector
- Defective outdoor unit PCB

Troubleshooting

Check No.17
Refer to P.128

Check No.19
Refer to P.129

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.


Turn off the power and turn it on again.
WARNING
To cool the electrical components, the outdoor fan starts when the radiation fin temperature rises above **C** ˚C and stops when it drops below **B** ˚C.
Error again or outdoor fan activated?
YES
NO
Check the radiation fin temperature.
Above **A** ˚C?
NO
Replace the outdoor unit PCB.
YES
Check No. 19
Check the outdoor fan or related.
NG
Replace the fan motor.
Correct the connectors and fan motor lead wire.
Replace the outdoor unit PCB.
OK
Radiation fin dirty?
Too dirty
Clean up the radiation fin.
Slightly dirty
Check No. 17
Check the installation condition.
(R14444)

	A (°C)	**B** (°C)	**C** (°C)
25/35 class	98	75	83
50 class	95	80	85

4.23 Radiation Fin Temperature Rise

Remote Controller Display

L4

Method of Malfunction Detection

A radiation fin temperature rise is detected by checking the radiation fin thermistor with the compressor on.

Malfunction Decision Conditions

- If the radiation fin temperature with the compressor on is above **A** °C.
- The error is cleared when the radiation fin temperature drops below **B** °C.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

	A (°C)	**B** (°C)
25/35 class	98	78
50 class	105	99

Supposed Causes

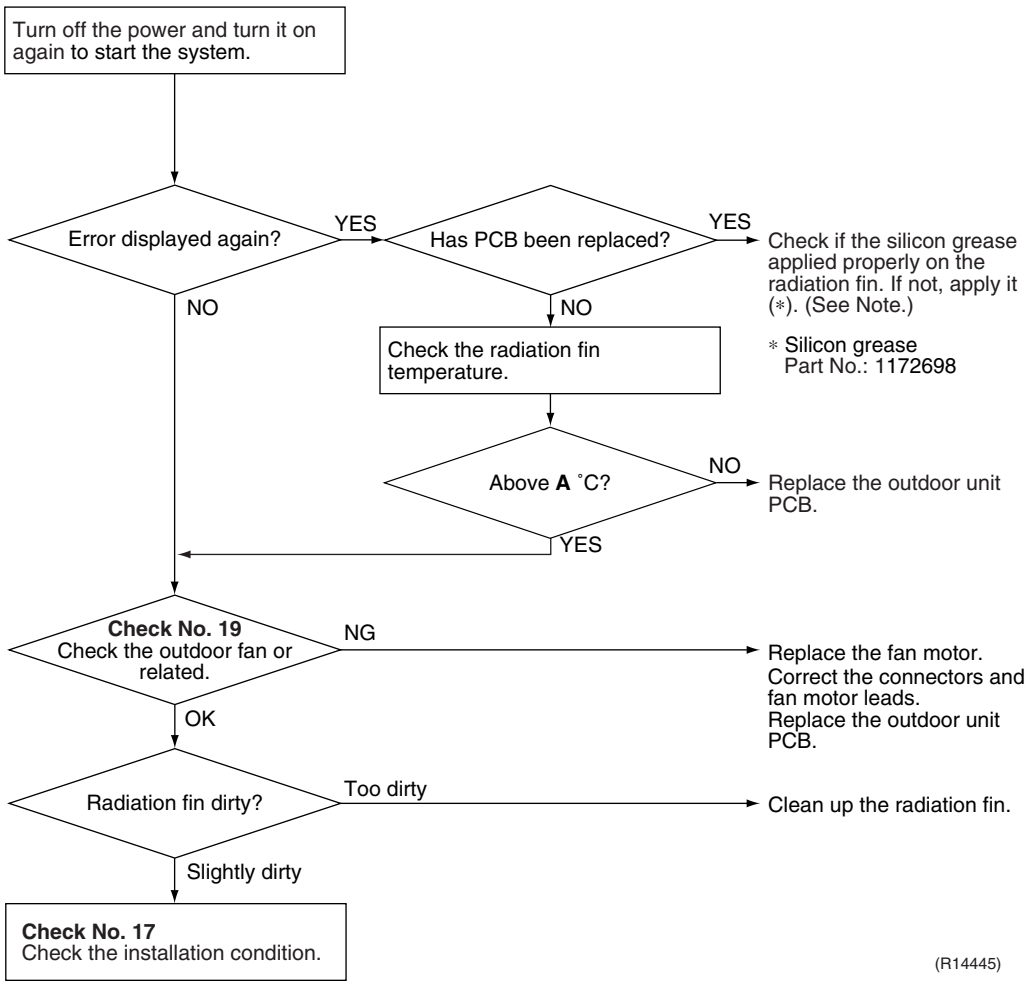
- Defective outdoor fan motor
- Short circuit
- Defective radiation fin thermistor
- Disconnection of connector
- Defective outdoor unit PCB
- Silicon grease is not applied properly on the radiation fin after replacing the outdoor unit PCB.

Troubleshooting

Check No.17
Refer to P.128

Check No.19
Refer to P.129

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



	A (°C)
25/35 class	98
50 class	105

Note: Refer to “Application of silicon grease to a power transistor and a diode bridge” on page 226 for detail.

4.24 Output Overcurrent Detection

Remote Controller Display

L5

Method of Malfunction Detection

An output overcurrent is detected by checking the current that flows in the inverter DC section.

Malfunction Decision Conditions

- A position signal error occurs while the compressor is running.
- A speed error occurs while the compressor is running.
- An output overcurrent signal is fed from the output overcurrent detection circuit to the microcomputer.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes (50 class: 5 minutes) without any other error

Supposed Causes

- Poor installation condition
- Closed stop valve
- Defective power module
- Wrong internal wiring
- Abnormal power supply voltage
- Defective outdoor unit PCB
- Defective compressor

Troubleshooting

Check No.15
Refer to P.125

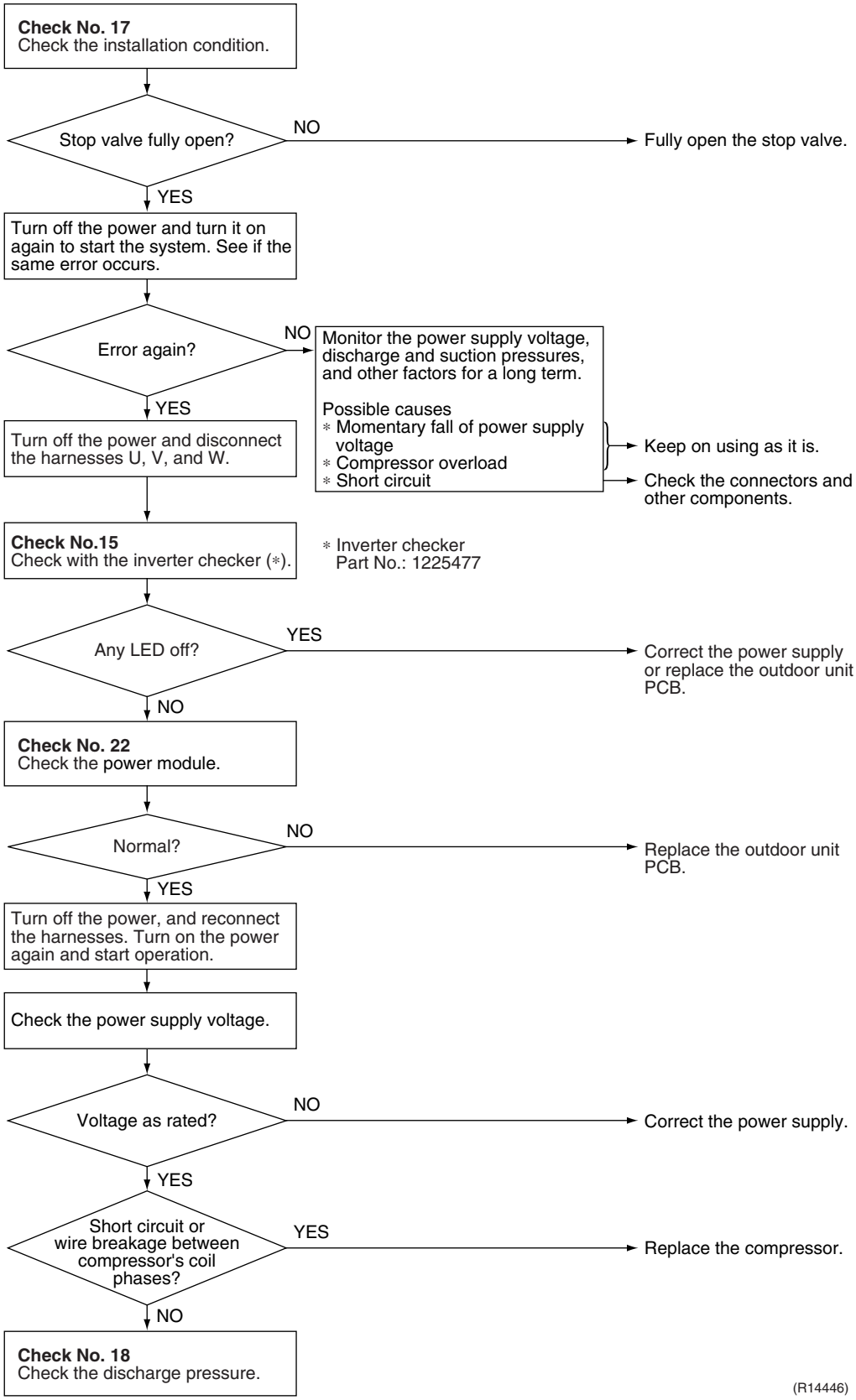
Check No.17
Refer to P.128

Check No.18
Refer to P.128

Check No.22
Refer to P.130

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

* An output overcurrent may result from wrong internal wiring. If the system is interrupted by an output overcurrent after the wires have been disconnected and reconnected for part replacement, check the wiring again.


Check No. 17
Check the installation condition.
Stop valve fully open?
NO
Fully open the stop valve.
YES
Turn off the power and turn it on again to start the system. See if the same error occurs.
Error again?
NO
Monitor the power supply voltage, discharge and suction pressures, and other factors for a long term.
Possible causes
* Momentary fall of power supply voltage
* Compressor overload
* Short circuit
Keep on using as it is.
Check the connectors and other components.
YES
Turn off the power and disconnect the harnesses U, V, and W.
Check No.15
Check with the inverter checker (*).
* Inverter checker
Part No.: 1225477
Any LED off?
YES
Correct the power supply or replace the outdoor unit PCB.
NO
Check No. 22
Check the power module.
Normal?
NO
Replace the outdoor unit PCB.
YES
Turn off the power, and reconnect the harnesses. Turn on the power again and start operation.
Check the power supply voltage.
Voltage as rated?
NO
Correct the power supply.
YES
Short circuit or wire breakage between compressor's coil phases?
YES
Replace the compressor.
NO
Check No. 18
Check the discharge pressure.
(R14446)

4.25 Refrigerant Shortage

Remote Controller Display

U0

Method of Malfunction Detection

Refrigerant shortage detection I:
Refrigerant shortage is detected by checking the input current value and the compressor running frequency. If the refrigerant is short, the input current is lower than the normal value.

Refrigerant shortage detection II:
Refrigerant shortage is detected by checking the discharge pipe temperature and the opening of the outdoor electronic expansion valve. If the refrigerant is short, the discharge pipe temperature tends to rise.

Refrigerant shortage detection III:
Refrigerant shortage is detected by checking the difference between suction and discharge temperature.

Malfunction Decision Conditions

Refrigerant shortage detection I:
The following conditions continue for 7 minutes.

<25/35 class>

- Input current × input voltage ≤ **A** × output frequency + **B**
- Output frequency > **C**

	A (–)	**B** (W)	**C** (Hz)
25/35 class	640/256	0	55

<50 class>

- Input current ≤ **D** × output frequency + **E**
- Output frequency > **F**

	D (–)	**E** (A)	**F** (Hz)
50 class	18/1000	0.7	55

Refrigerant shortage detection II :
The following conditions continue for 80 seconds.

- Opening of the outdoor electronic expansion valve ≥ **G**
- Discharge pipe temperature > **H** × target discharge pipe temperature + **J**

	G (pulse)	**H** (–)	**J** (°C)
25/35 class	480	128/128	30
50 class	480	128/128	cooling: 20, heating: 45

Refrigerant shortage detection III : (25/35 class only)
When the difference of the temperature is lower than **K** °C, it is regarded as refrigerant shortage.

		K (°C)
Cooling	room thermistor temperature – indoor heat exchanger temperature	4.0
	outdoor heat exchanger temperature – outdoor temperature	4.0
Heating	indoor heat exchanger temperature – room thermistor temperature	3.0
	outdoor temperature – outdoor heat exchanger temperature	3.0

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

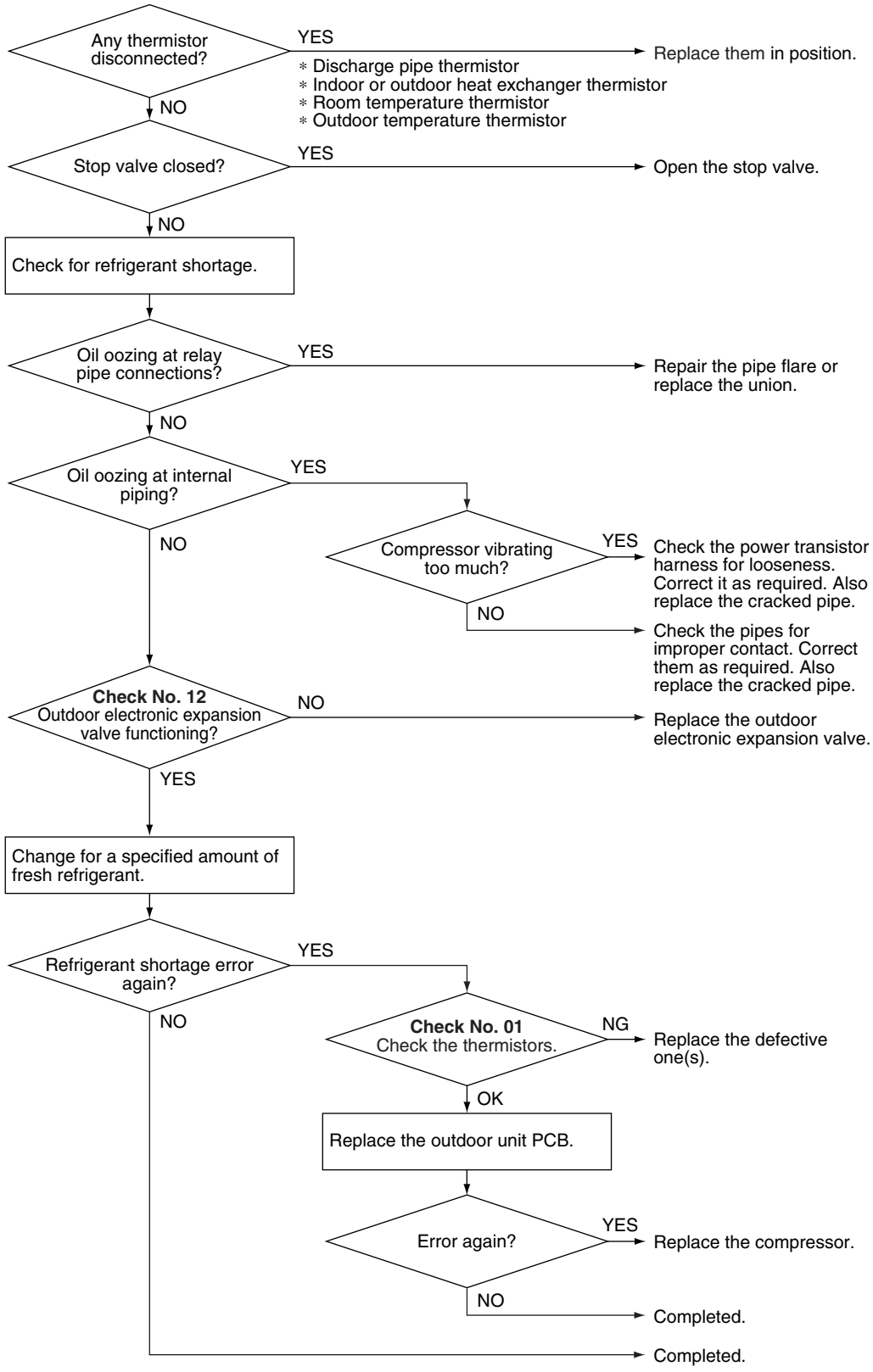
- Disconnection of the discharge pipe thermistor, indoor or outdoor heat exchanger thermistor, room or outdoor temperature thermistor
- Closed stop valve
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Defective outdoor electronic expansion valve

Troubleshooting

Check No.01
Refer to P.121

Check No.12
Refer to P.123

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R15311)

4.26 Low-voltage Detection or Over-voltage Detection

Remote Controller Display

U2

Method of Malfunction Detection

★ **Indoor Unit**

Evaluation of zero-cross detection of power supply by the indoor unit PCB.

★ **Outdoor Unit**

Low-voltage detection:
An abnormal voltage drop is detected by the DC voltage detection circuit.

Over-voltage detection:
An abnormal voltage rise is detected by the over-voltage detection circuit.

Malfunction Decision Conditions

★ **Indoor Unit**

There is no zero-cross detection in approximately 10 seconds.

★ **Outdoor Unit**

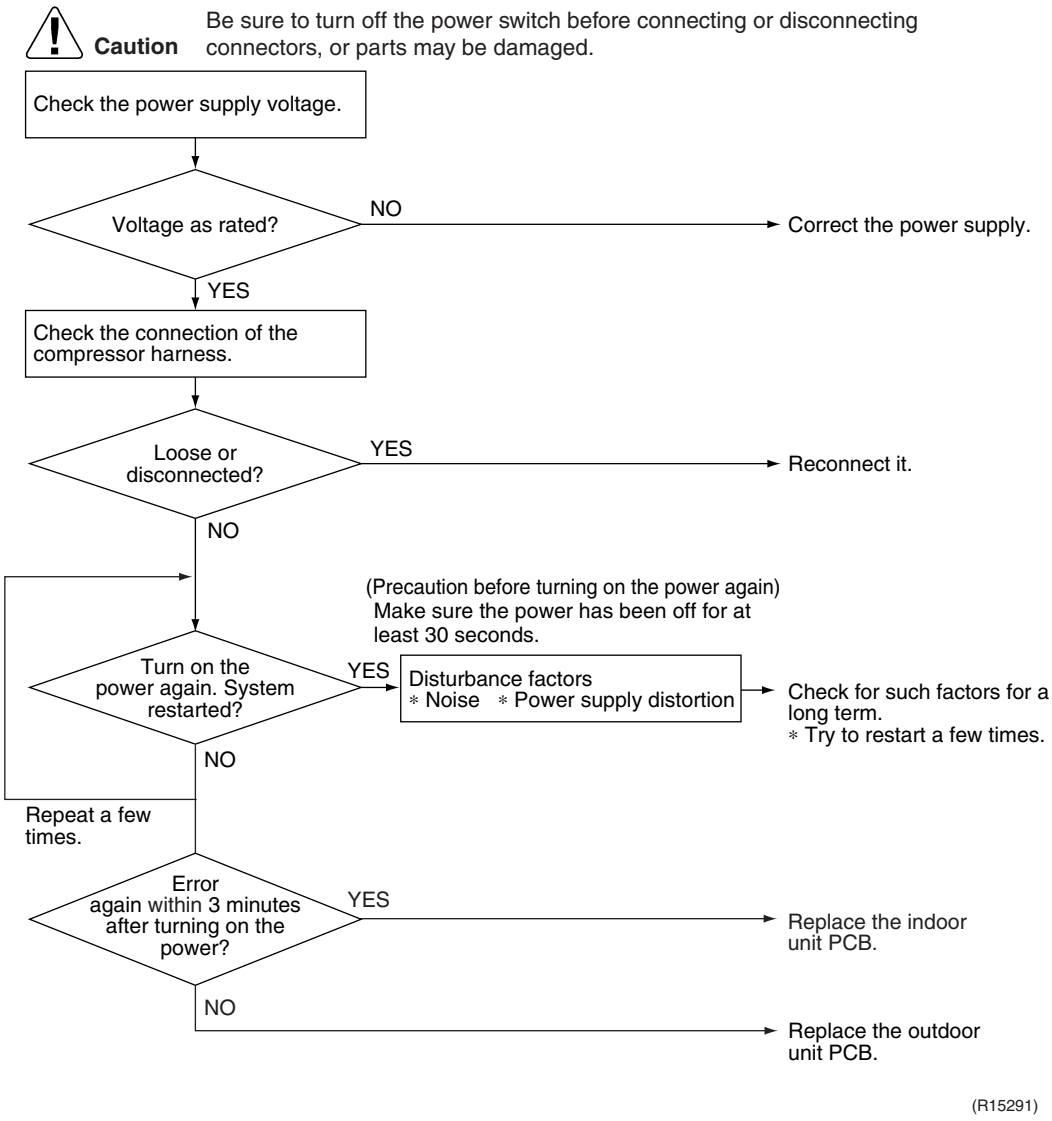
Low-voltage detection:
- The voltage detected by the DC voltage detection circuit is below 150 ~ 180 V (depending on the model).

Over-voltage detection:
- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer. (The voltage is over 400 V.)
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes (50 class: 5 minutes) without any other error

Supposed Causes

- Power supply voltage is not as specified.
- Defective DC voltage detection circuit
- Defective over-voltage detection circuit
- Defective PAM control part
- Disconnection of compressor harness
- Noise
- Momentary fall of voltage
- Momentary power failure
- Defective indoor unit PCB

Troubleshooting


Caution
Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.
Check the power supply voltage.
Voltage as rated?
NO
Correct the power supply.
YES
Check the connection of the compressor harness.
Loose or disconnected?
YES
Reconnect it.
NO
(Precaution before turning on the power again)
Make sure the power has been off for at least 30 seconds.
Turn on the power again. System restarted?
YES
Disturbance factors
∗ Noise ∗ Power supply distortion
Check for such factors for a long term.
∗ Try to restart a few times.
NO
Repeat a few times.
Error again within 3 minutes after turning on the power?
YES
Replace the indoor unit PCB.
NO
Replace the outdoor unit PCB.

(R15291)

4.27 Signal Transmission Error on Outdoor Unit PCB (50 Class Only)

Remote Controller Display

U7

Method of Malfunction Detection

Communication error between microcomputer mounted on the main microcomputer and PM1.

Malfunction Decision Conditions

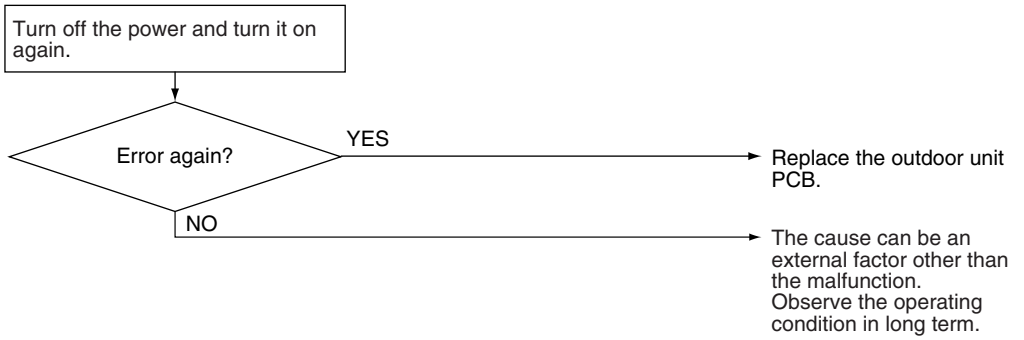
- The abnormality is determined when the data sent from the PM1 can not be received for 9 seconds.
- The error counter is reset when the data from the PM1 can be successfully received.

Supposed Causes

- Defective outdoor unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.


Turn off the power and turn it on again.
Error again?
YES
Replace the outdoor unit PCB.
NO
The cause can be an external factor other than the malfunction. Observe the operating condition in long term.

(R7185)

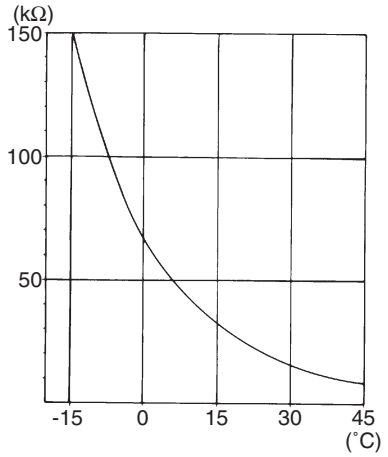
5. Check

5.1 Thermistor Resistance Check

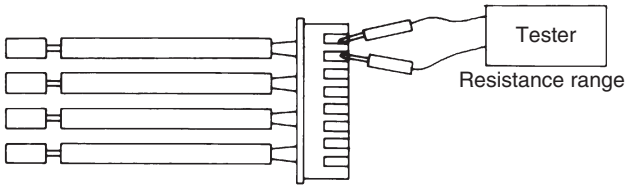
Check No.01 Disconnect the connectors of the thermistors from the PCB, and measure the resistance of each thermistor using a tester.
The relationship between normal temperature and resistance is shown in the table and the graphs below.

Thermistor temperature (°C)	Resistance (kΩ)
–20	211.0
–15	150.0
–10	116.5
–5	88.0
0	67.2
5	51.9
10	40.0
15	31.8
20	25.0
25	20.0
30	16.0
35	13.0
40	10.6
45	8.7
50	7.2

(R25°C = 20 kΩ, B = 3950 K)

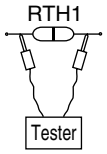


(R11905)



(R11906)

- For models in which the thermistor is directly mounted on the PCB, disconnect the connector for the PCB and measure.

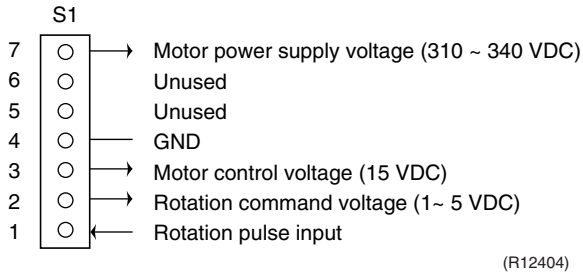


(R3460)

5.2 Fan Motor Connector Check

Check No.02

1. Check the connection of connector.
2. Check the motor power supply voltage output (pins 4 - 7).
3. Check the motor control voltage (pins 4 - 3).
4. Check the rotation command voltage (pins 4 - 2).
5. Check the rotation pulse (pins 4 - 1).



5.3 Power Supply Waveforms Check

Check No.11

Measure the power supply waveform between No. 1 and No. 2 on the terminal board, and check the waveform disturbance.

- Check to see if the power supply waveform is a sine wave. (Fig.1)
- Check to see if there is waveform disturbance near the zero cross. (sections circled in Fig.2)

Fig.1

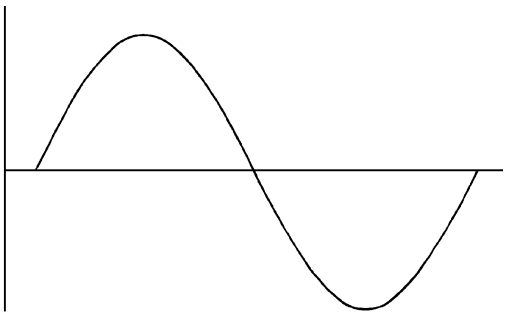
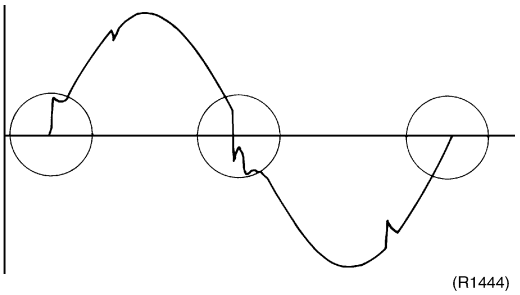


Fig.2

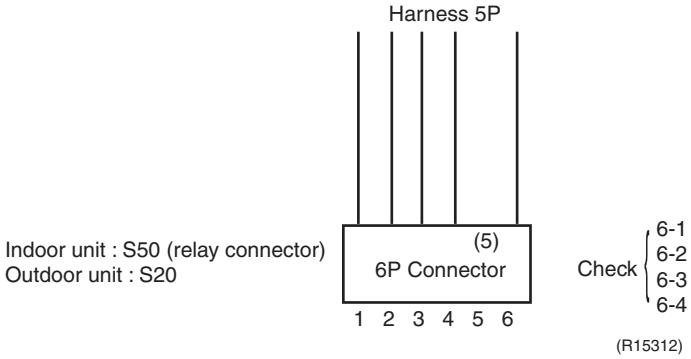


5.4 Electronic Expansion Valve Coil Check

Check No.12

Conduct the followings to check the electronic expansion valve coil (EV).

1. Check to see if the EV connector is correctly connected to the PCB.
2. Turn the power off and on again, and check to see if the EV generate a latching sound.
3. If the EV does not generate a latching sound in the above step 2, disconnect the connector and check the continuity using a tester.
4. Check the continuity between the pins 1 - 6, 2 - 6, 3 - 6, and 4 - 6. If there is no continuity between the pins, the EV coil is faulty.

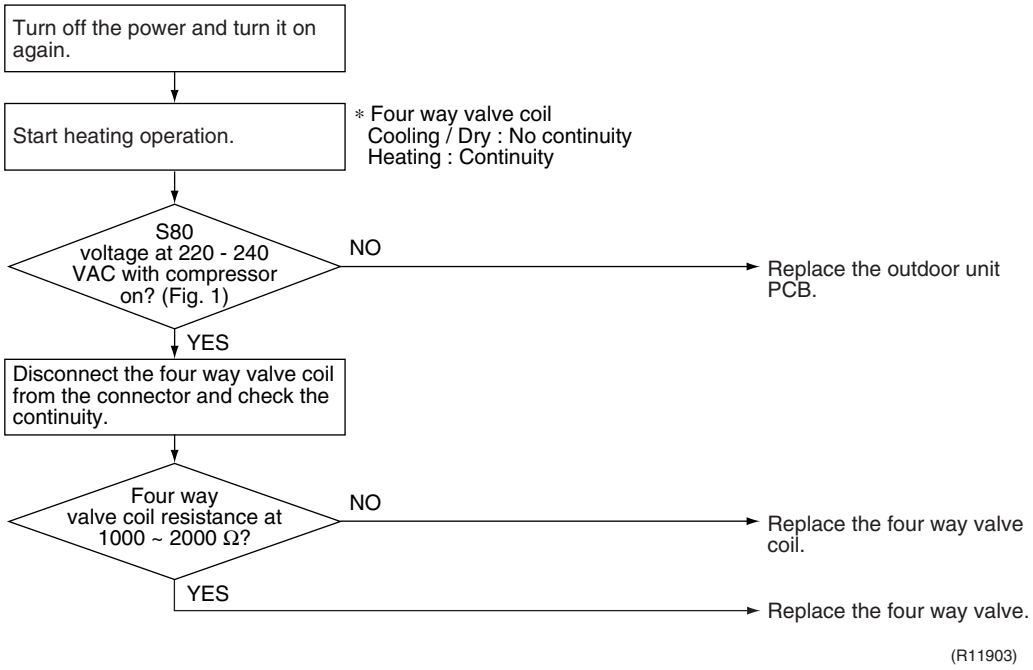


5. If the continuity is confirmed in the above step 3, the PCB is faulty.

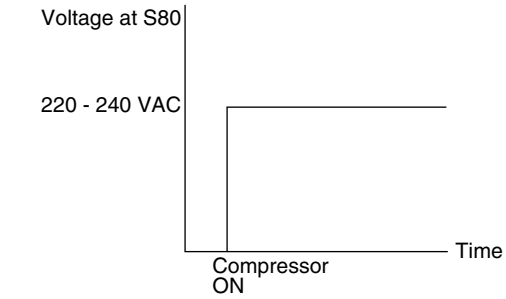
Note: Please note that the latching sound varies depending on the valve type.

5.5 Four Way Valve Performance Check

Check No.13


Turn off the power and turn it on again.
Start heating operation.
* Four way valve coil
Cooling / Dry : No continuity
Heating : Continuity
S80 voltage at 220 - 240 VAC with compressor on? (Fig. 1)
NO
Replace the outdoor unit PCB.
YES
Disconnect the four way valve coil from the connector and check the continuity.
Four way valve coil resistance at 1000 ~ 2000 Ω?
NO
Replace the four way valve coil.
YES
Replace the four way valve.
(R11903)

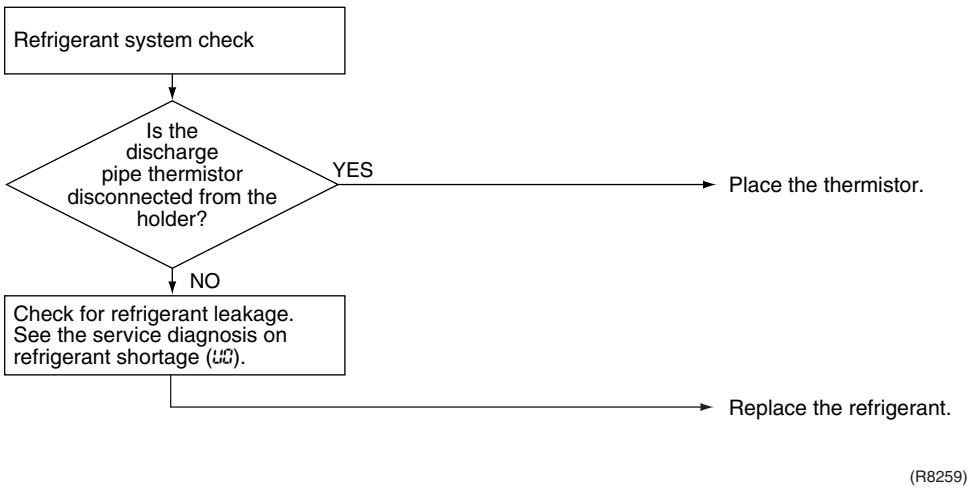
(Fig. 1)



(R11904)

5.6 Inverter Unit Refrigerant System Check

Check No.14


Refrigerant system check
Is the discharge pipe thermistor disconnected from the holder?
YES
Place the thermistor.
NO
Check for refrigerant leakage. See the service diagnosis on refrigerant shortage (ud).
Replace the refrigerant.
(R8259)

5.7 “Inverter Checker” Check

Check No.15

■ **Characteristics**

If an abnormal stop occurs due to compressor startup failure or overcurrent output when using inverter unit, it is difficult to judge whether it is caused by the compressor failure or other failure (control PCB, power module, etc.). The inverter checker makes it possible to judge the cause of trouble easily and securely. (Connect this checker as a quasi-compressor instead of compressor and check the output of inverter)

■ **Operation Method**

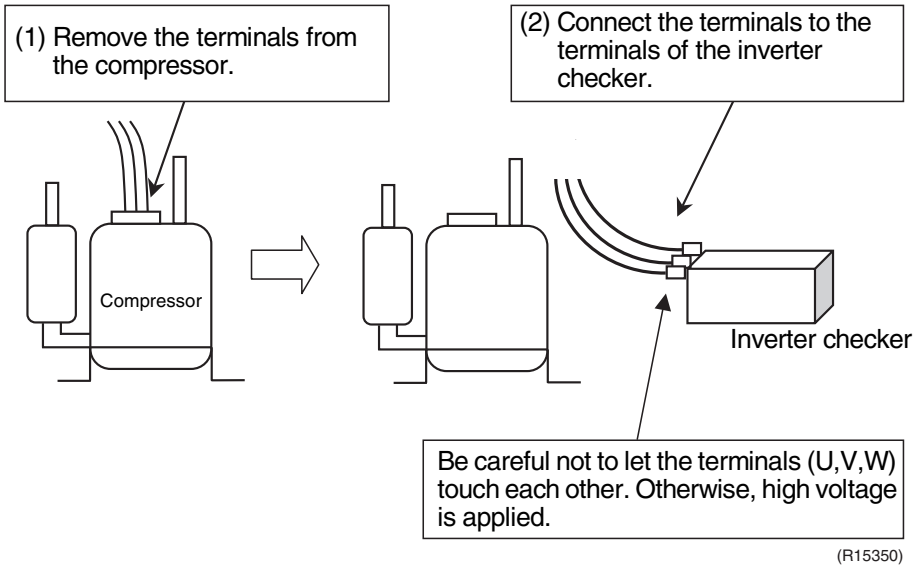
Step 1

Be sure to turn the power off.

Step 2

Install the inverter checker instead of a compressor.

Note:
Make sure the charged voltage of the built-in smoothing electrolytic capacitor drops to 10 VDC or below before carrying out the service work.


(1) Remove the terminals from the compressor.
(2) Connect the terminals to the terminals of the inverter checker.
Compressor
Inverter checker
Be careful not to let the terminals (U,V,W) touch each other. Otherwise, high voltage is applied.
(R15350)

Reference:
If the terminals of the compressor are not FASTON terminals (difficult to remove the wire on the terminals), it is possible to connect wires available on site to the outdoor unit from output side of PCB. (Do not connect them to the compressor at the same time, otherwise it may result in incorrect detection.)

Step 3

Activate power transistor test operation from the outdoor unit.

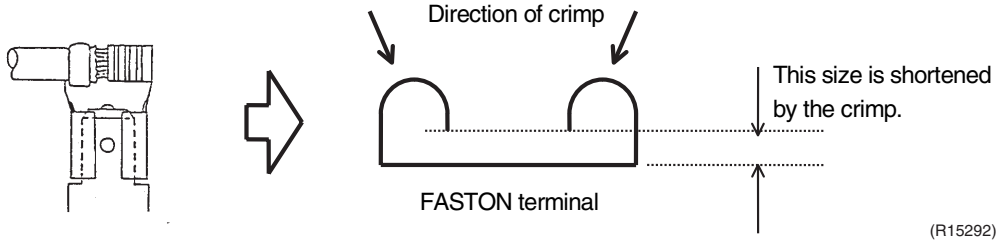
1) Press the forced cooling operation ON/OFF button for 5 seconds.
   (Refer to page 221 for the position.)
   → Power transistor test operation starts.

■ **Diagnose method (Diagnose according to 6 LEDs lighting status.)**

(1) When all the LEDs are lit uniformly, the compressor is defective.
→ Replace the compressor.
(2) When the LEDs are not lit uniformly, check the power module.
→ Refer to **Check No.22**.
(3) If NG in **Check No.22**, replace the power module (PCB).
If OK in **Check No.22**, check if there is any solder cracking on the PCB.
(4) If any solder cracking is found, replace the PCB or repair the soldered section.
If there is no solder cracking, replace the PCB.

Caution

(1) When the output frequency is low, the LEDs blink slowly. As the output frequency increases, the LEDs blink quicker. (The LEDs look like they are lit.)
(2) On completion of diagnose by the inverter checker, be sure to re-crimp the FASTON terminals. Otherwise, the terminals may be burned due to loosening.

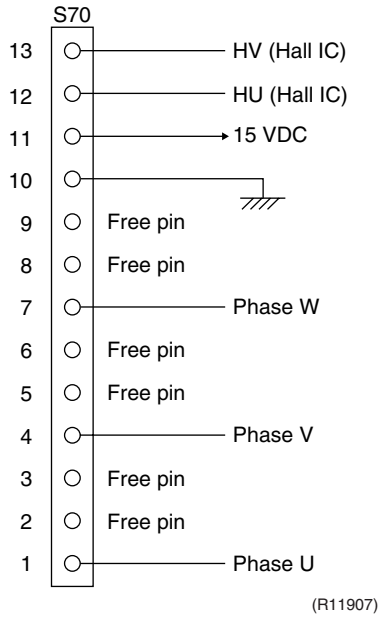


5.8 Rotation Pulse Check on the Outdoor Unit PCB

Check No.16

25/35 class

1. Check that the voltage between the pins 10 - 11 is 15 VDC.
2. Check if the Hall IC generates the rotation pulse (0 ~ 15 VDC) 4 times between the pins 10 - 12, 10 - 13, when the fan motor is manually rotated once.



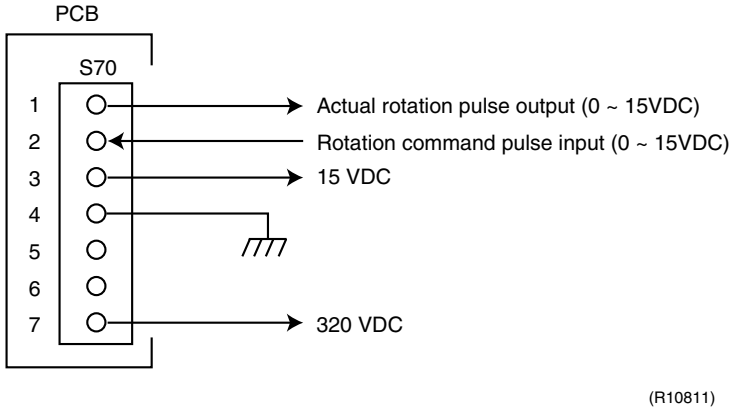
50 class

Make sure that the voltage of 320 ± 30 V is applied.

1. Set operation off and power off. Disconnect the connector S70.
2. Check that the voltage between the pins 4 - 7 is 320 VDC.
3. Check that the control voltage between the pins 3 - 4 is 15 VDC.
4. Check that the rotation command voltage between the pins 2 - 4 is 0 ~ 15 VDC.
5. Keep operation off and power off. Connect the connector S70.
6. Check whether 2 pulses (0 ~ 15 VDC) are output at the pins 1 - 4 when the fan motor is rotated 1 turn by hand.

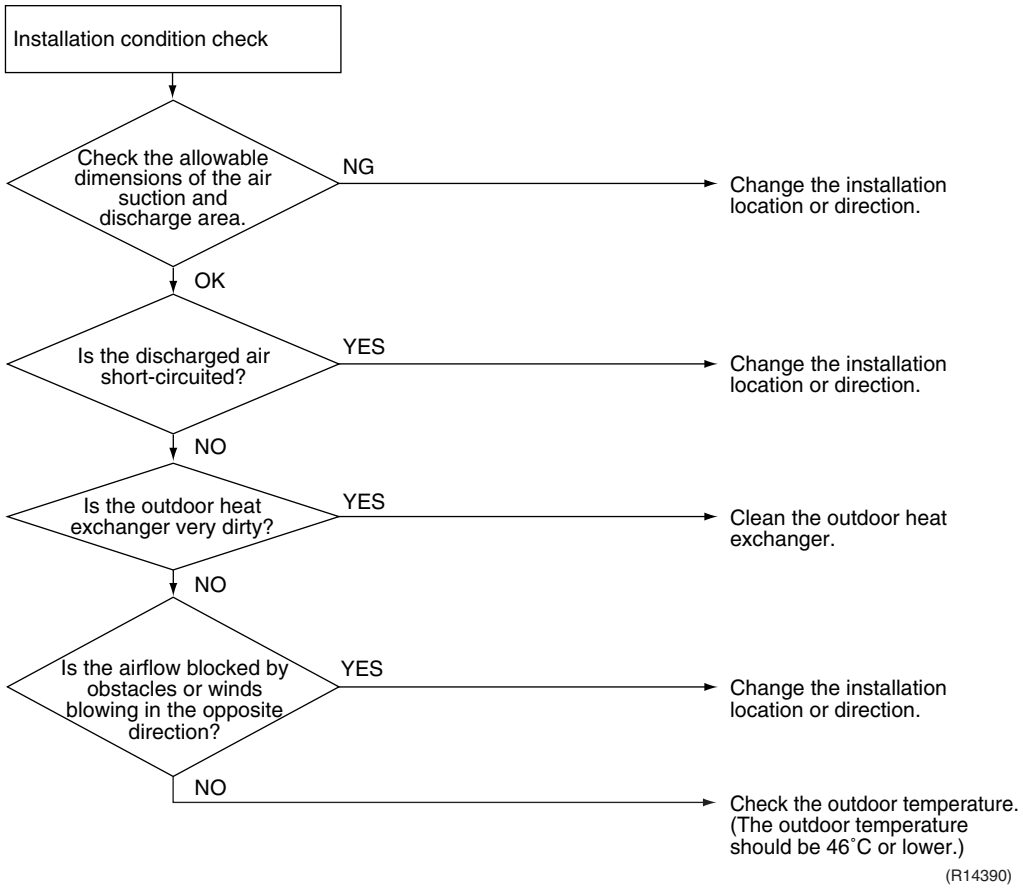
When the fuse is melted, check the outdoor fan motor for proper function.

If NG in step 2 → Defective PCB → Replace the outdoor unit PCB.
If NG in step 4 → Defective Hall IC → Replace the outdoor fan motor.
If OK in both steps 2 and 4 → Replace the outdoor unit PCB.



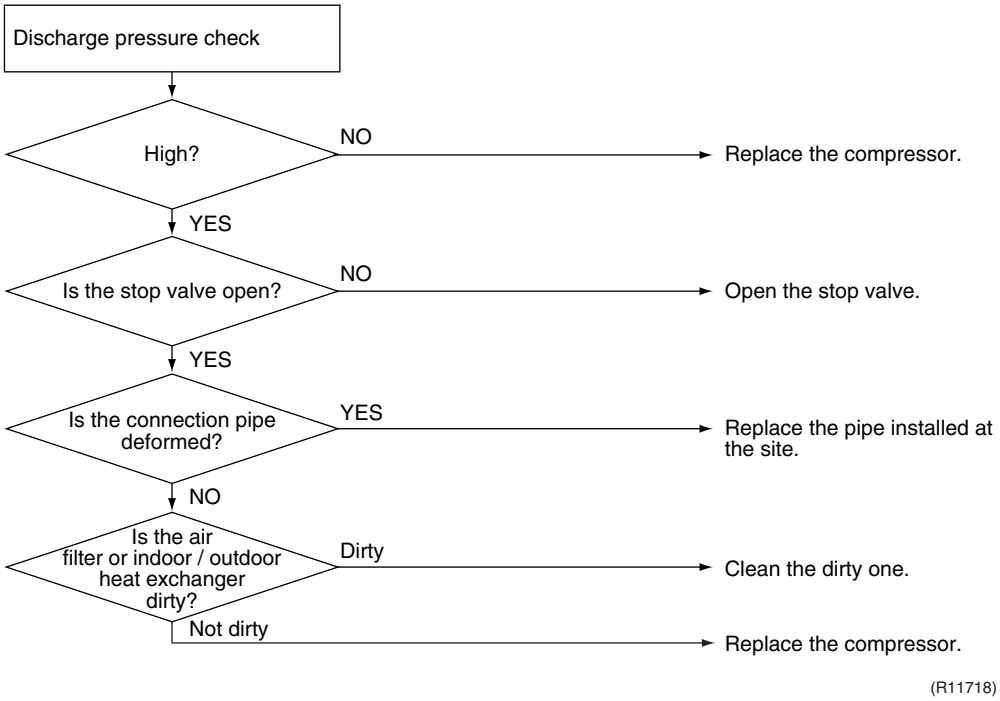
5.9 Installation Condition Check

Check No.17


Installation condition check
Check the allowable dimensions of the air suction and discharge area.
NG
Change the installation location or direction.
OK
Is the discharged air short-circuited?
YES
Change the installation location or direction.
NO
Is the outdoor heat exchanger very dirty?
YES
Clean the outdoor heat exchanger.
NO
Is the airflow blocked by obstacles or winds blowing in the opposite direction?
YES
Change the installation location or direction.
NO
Check the outdoor temperature. (The outdoor temperature should be 46˚C or lower.)
(R14390)

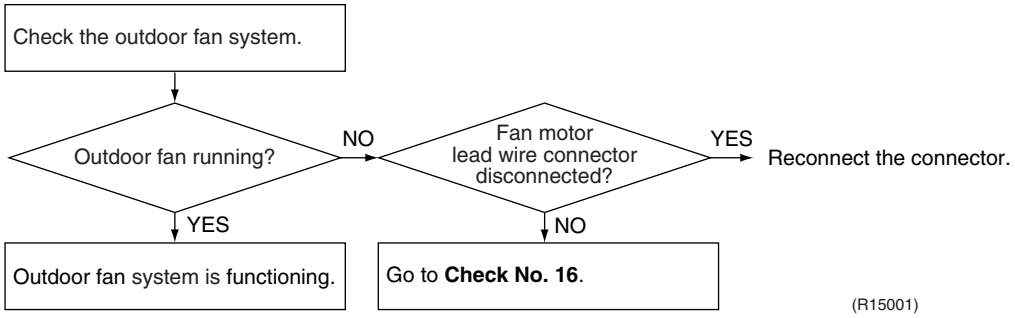
5.10 Discharge Pressure Check

Check No.18



5.11 Outdoor Fan System Check

Check No.19 **DC motor**



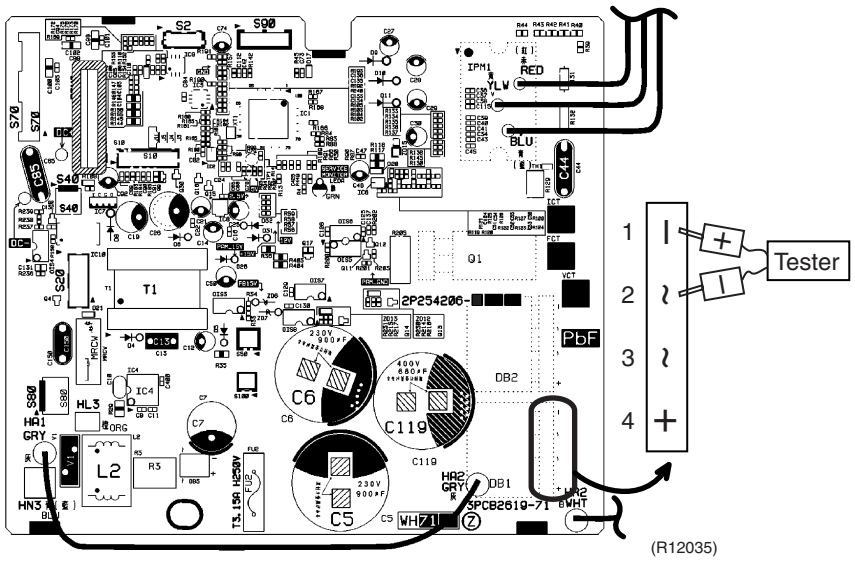
5.12 Main Circuit Short Check

Check No.20

Note: Check to make sure that the voltage between (+) and (–) of the diode bridge (DB1) is approx. 0 V before checking.

- Measure the resistance between the pins of the DB1 as below.
- If the resistance is ∞ or less than 1 kΩ, short circuit occurs on the main circuit.

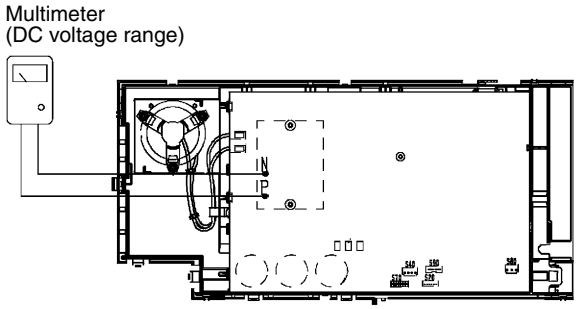
(–) terminal of the tester (in case of digital, (+) terminal)	~ (2, 3)	+ (4)	~ (2, 3)	− (1)
(+) terminal of the tester (in case of digital, (–) terminal)	+ (4)	~ (2, 3)	− (1)	~ (2, 3)
Resistance is OK.	several kΩ ~ several MΩ	∞	∞	several kΩ ~ several MΩ
Resistance is NG.	0 Ω or ∞	0	0	0 Ω or ∞



5.13 Capacitor Voltage Check

Check No.21

Before this check, be sure to check the main circuit for short circuit.
With the circuit breaker still on, measure the voltage as the illustration below. Be careful never to touch any live parts.



(R13538)

5.14 Power Module Check

Check No.22

Note: Check to make sure that the voltage between (+) and (–) of the power module is approx. 0 V before checking.

- Disconnect the compressor harness connector from the outdoor unit PCB. To disengage the connector, press the protrusion on the connector.
- Follow the procedure below to measure resistance between the terminals of the power module and the terminals of the compressor with a multi-tester. Evaluate the measurement results for a judgment.

Negative (–) terminal of tester (positive terminal (+) for digital tester)	Power module (+)	UVW	Power module (–)	UVW
Positive (+) terminal of tester (negative terminal (–) for digital tester)	UVW	Power module (+)	UVW	Power module (–)
Resistance is OK.	several kΩ ~ several MΩ			
Resistance is NG.	0 Ω or ∞			

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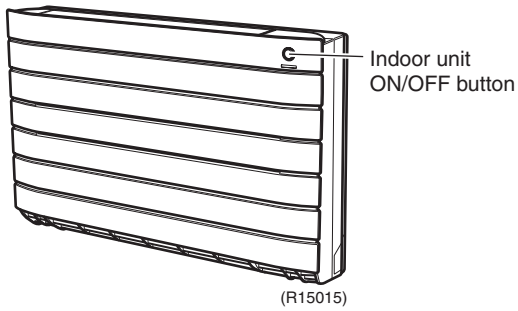
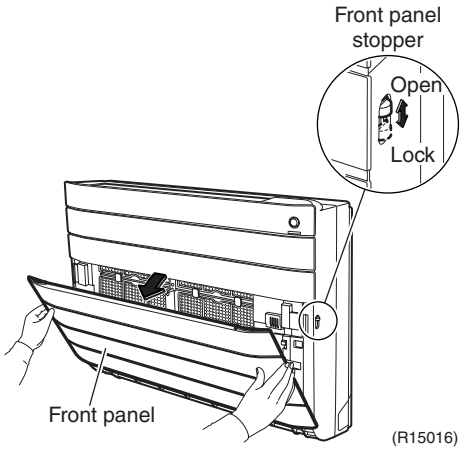
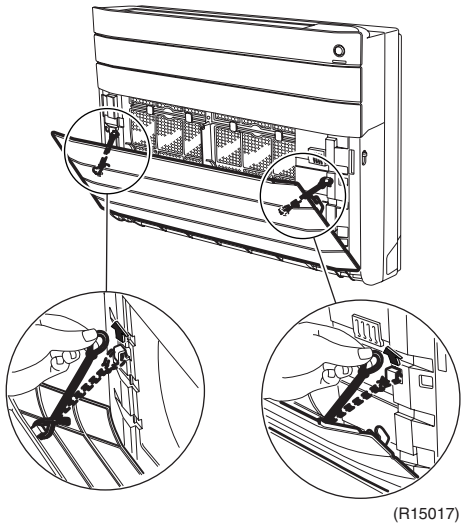
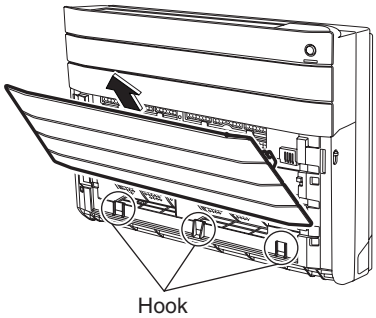
1. Indoor Unit

1.1 Removal of Front Panel

Procedure

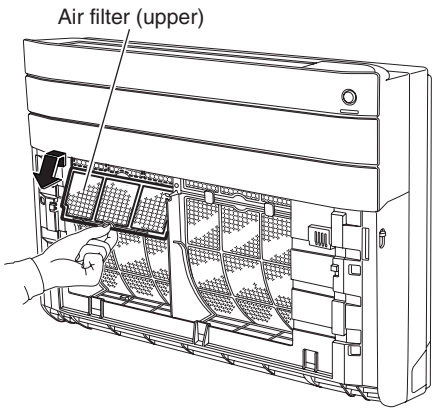
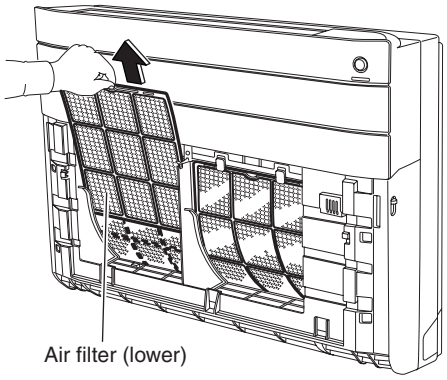
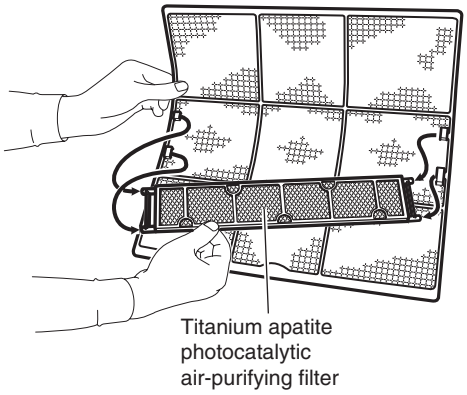
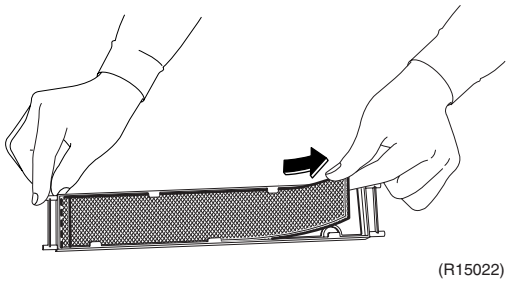
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1	Appearance feature  (R15015)	
2	Open the front panel.  (R15016)	
3	Release the strings from the hooks.  (R15017)	■ When reassembling, hang the strings on the hooks.
4	Unfasten the 3 lower hooks and remove the front panel.  (R15018)	

1.2 Removal of Air Filters

Procedure

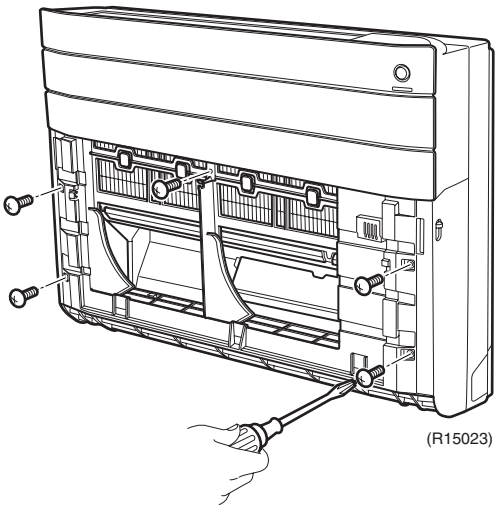
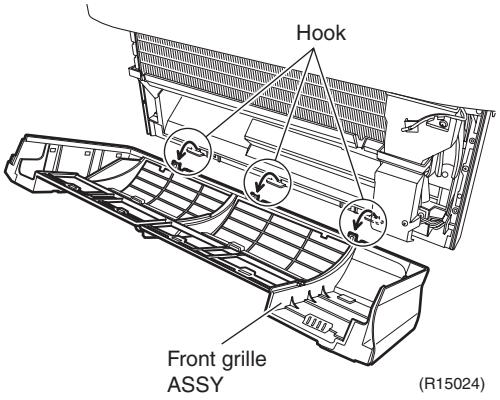
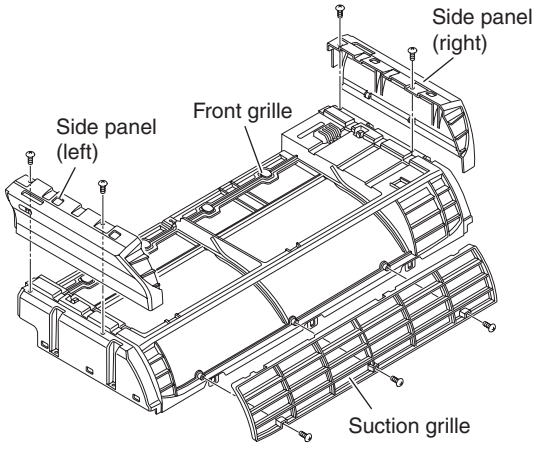
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Pull down and remove the air filters (upper).	 (R15019)	
2	Pull up and remove the air filters (lower).	 (R15020)	
3	Remove the Titanium apatite photocatalytic air-purifying filter.	 (R15021)  (R15022)	■ To prevent the damage, do not remove the Titanium apatite photocatalytic air-purifying filter from the frame when cleaning it.

1.3 Removal of Front Grille ASSY

Procedure

Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

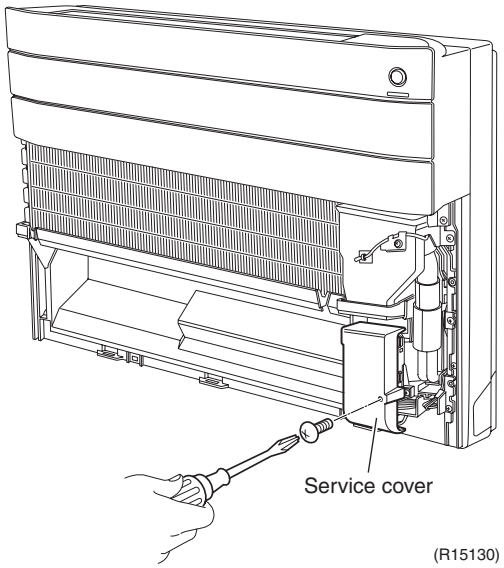
Step	Procedure		Points
1	Remove the 5 screws.	 (R15023)	
2	Unfasten the 3 lower hooks and remove the front grille ASSY	 (R15024)	
3	Remove the 2 screws to remove the side panel (right).	 (R15025)	
4	Remove the 2 screws to remove the side panel (left).		
5	Remove the 3 screws to remove the suction grille.		

1.4 Removal of Electrical Box / PCBs

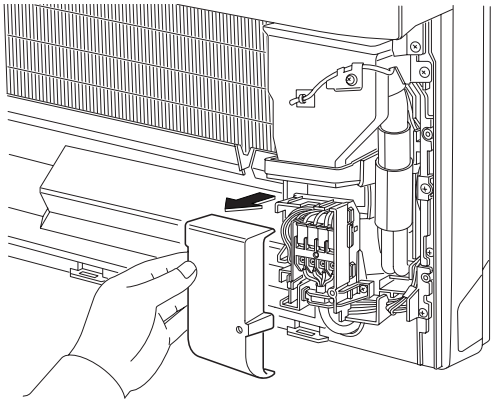
Procedure

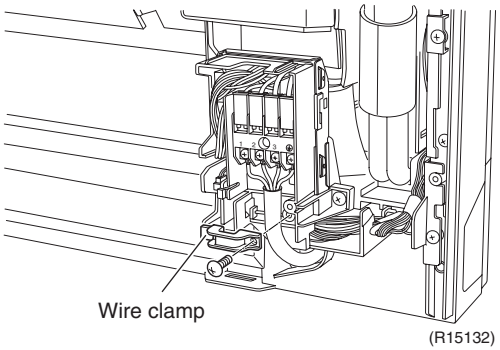
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1. Remove the electrical box.		
1	Remove the screw of the service cover.	
2	Remove the service cover.	
3	Remove the screw and wire clamp.	
4	Remove the 4 screws and disconnect the connecting wires.	

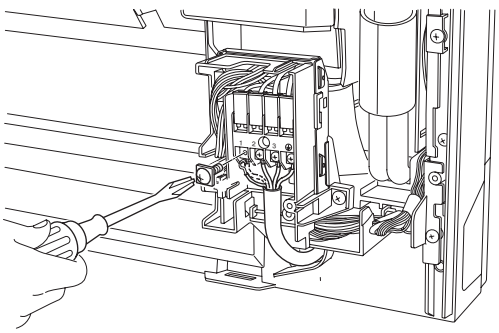


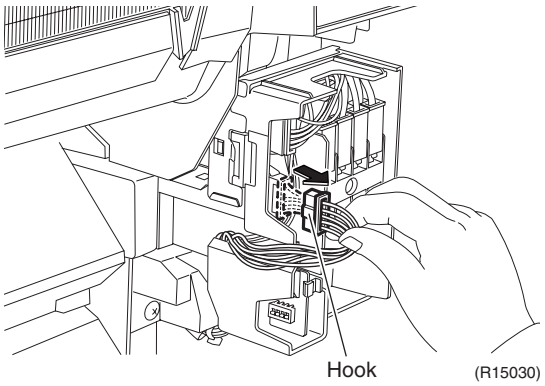
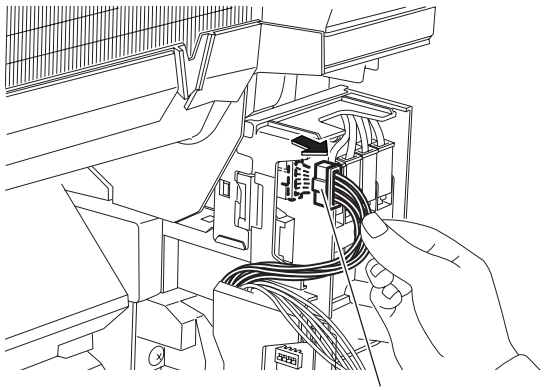
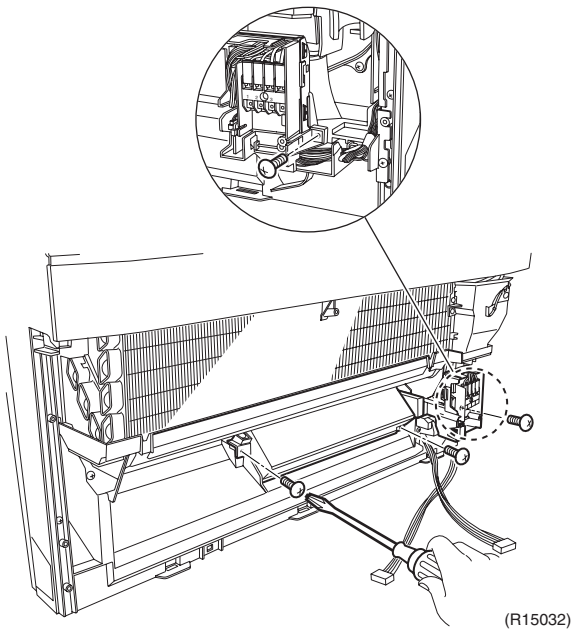
(R15130)

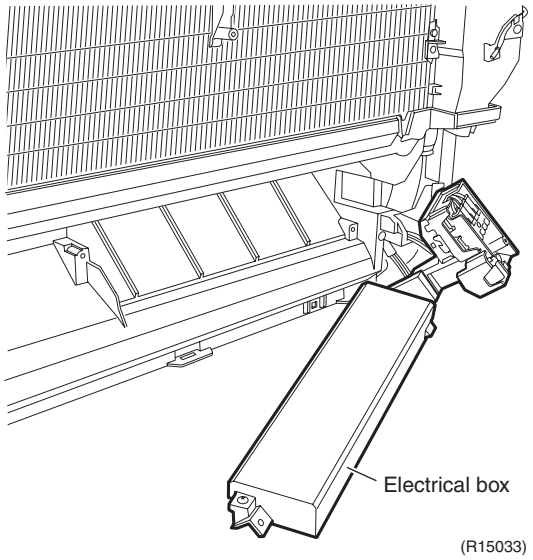
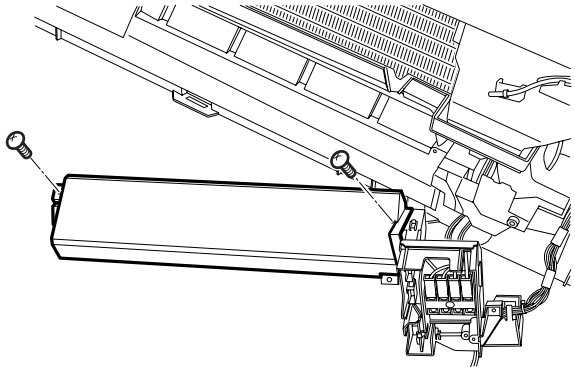
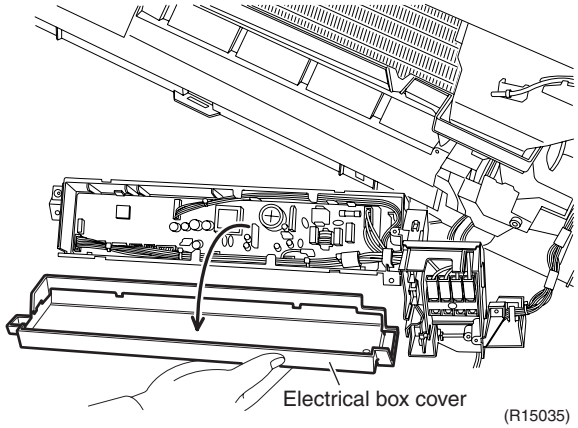

(R15131)



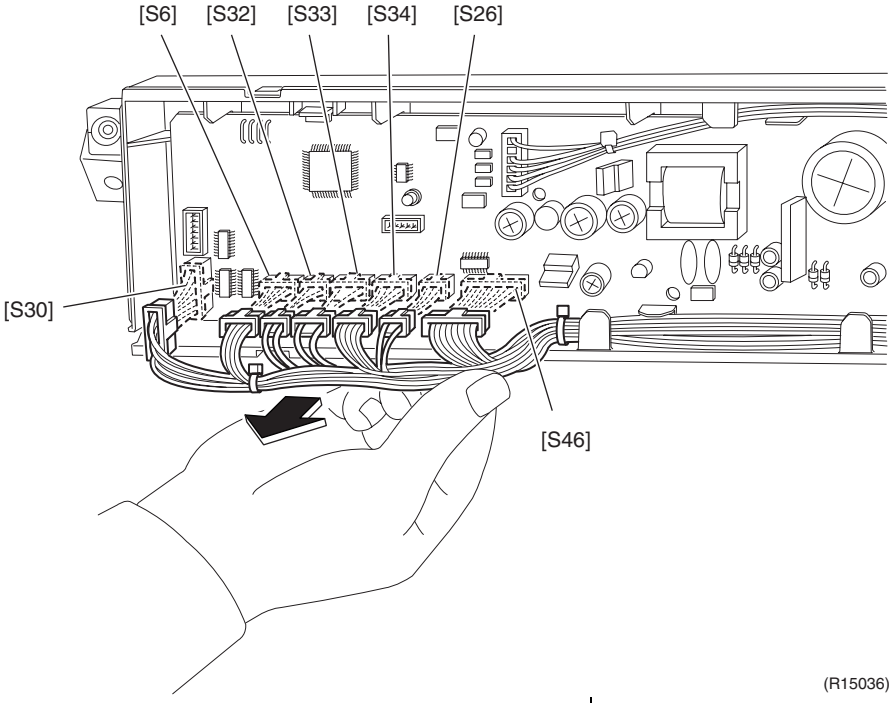
(R15132)


(R15133)

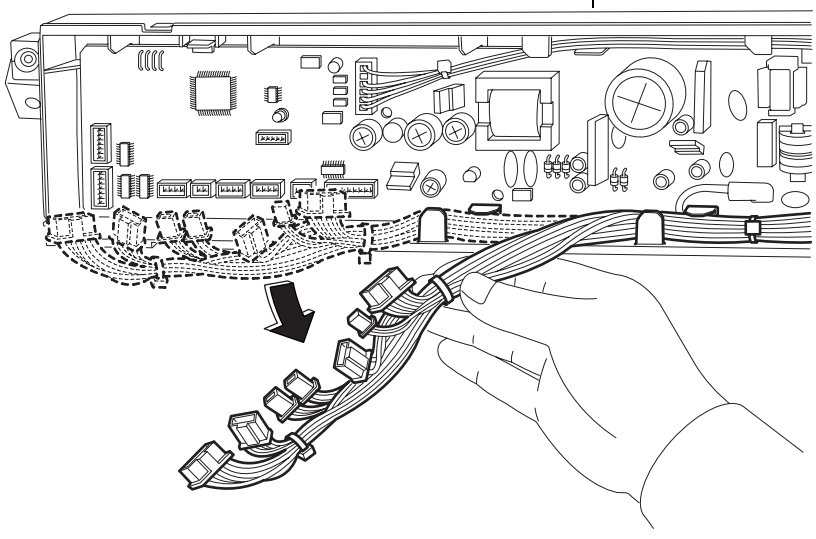
Step	Procedure		Points
5	Unfasten the hook and disconnect the relay connector for the indoor electronic expansion valve coil.	 (R15030)	Lower: for indoor electronic expansion valve
6	Unfasten the hook and disconnect the relay connector for the fan motor.	 (R15031)	Upper: for fan motor
7	Remove the 3 screws.	 (R15032)	

Step	Procedure		Points
8	The electrical box is now easy to manage.	 (R15033)	
2. Remove the main PCB.			
1	Remove the 2 screws.	 (R15034)	
2	Remove the electrical box cover.	 (R15035)	

Step	Procedure	Points
3	Unfasten the hook of each connector. Disconnect the connectors.	[S6]: swing motor [S26]: service PCB [S30]: indoor electronic expansion valve coil [S32]: indoor heat exchanger thermistor [S33]: room temperature thermistor [S34]: radiant panel thermistors [S46]: display PCB
4	Release the harnesses from the hooks.	

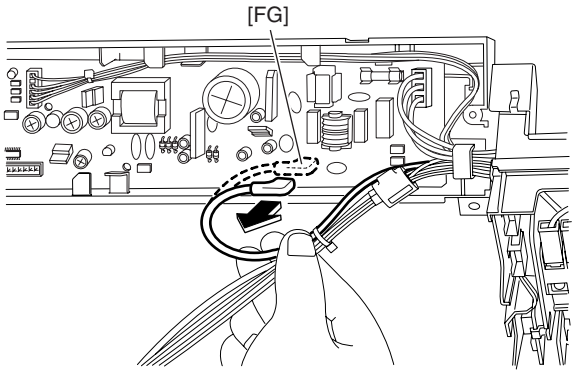


(R15036)

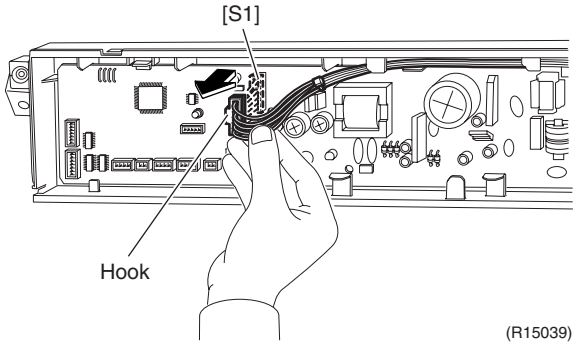


(R15037)

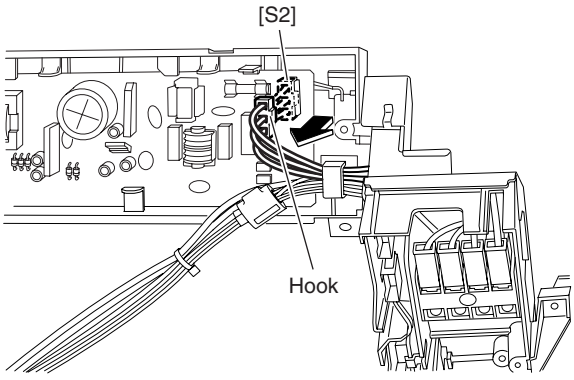
Step	Procedure	Points
5	Disconnect the connector for the earth [FG].	
6	Unfasten the hook and disconnect the connector for the fan motor [S1].	
7	Unfasten the hook and disconnect the connector for the terminal board [S2].	
8	Unfasten the 2 hooks.	



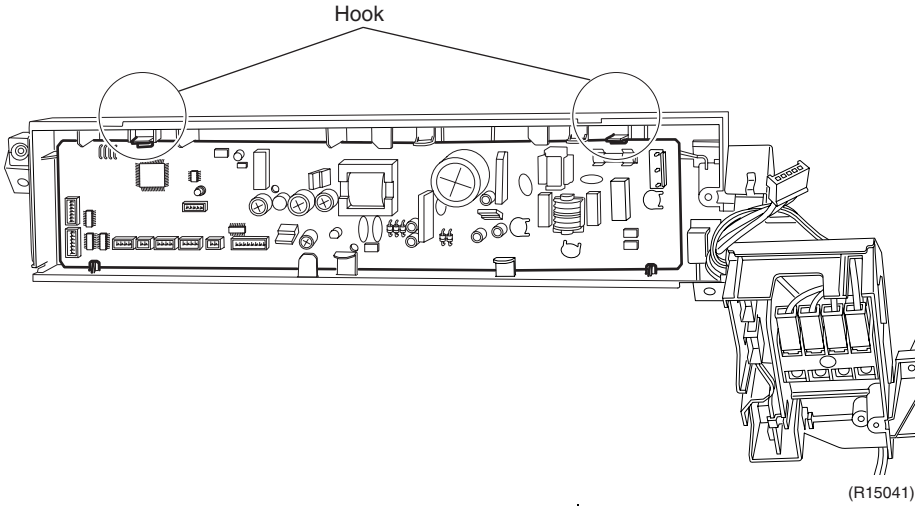
(R15038)



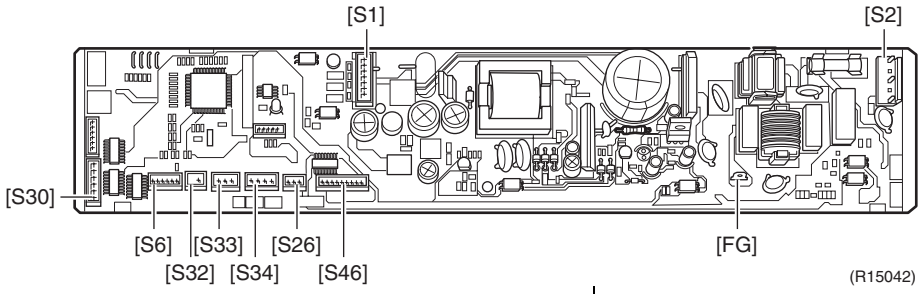
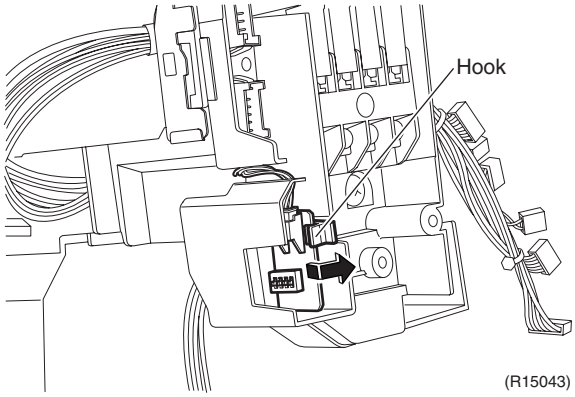
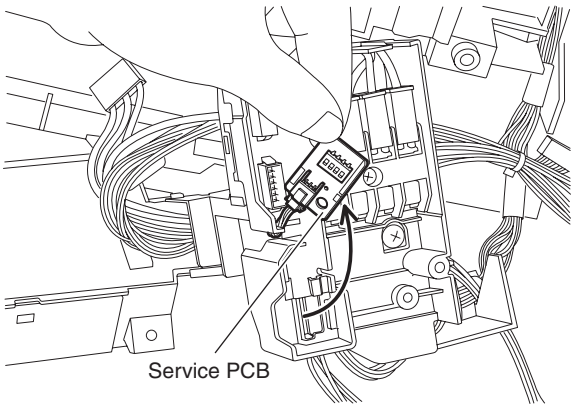
(R15039)

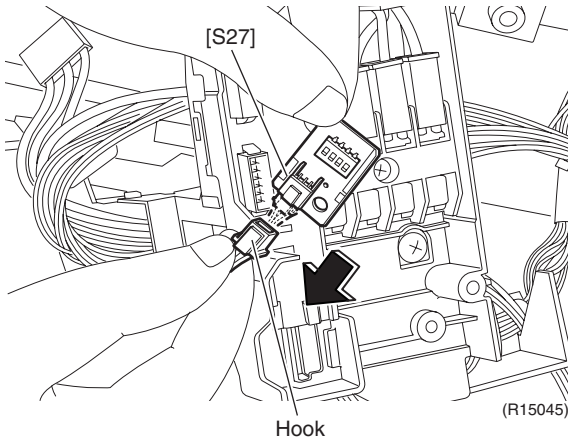
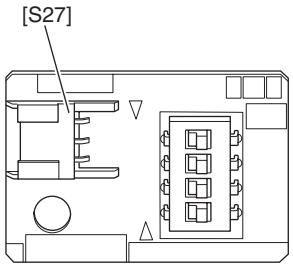
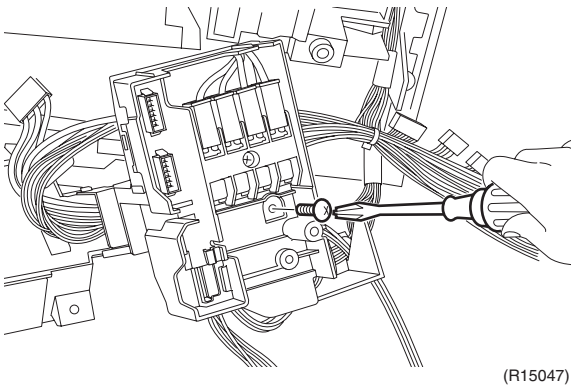
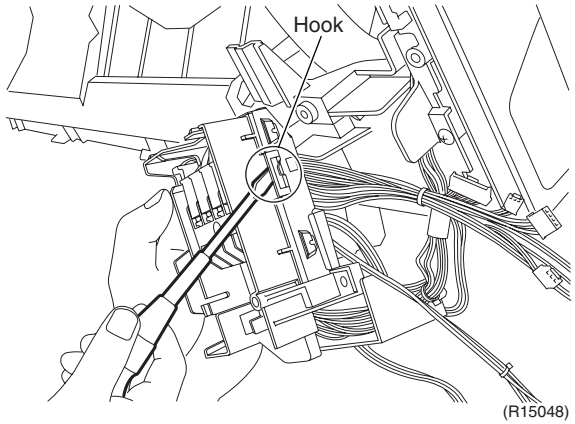


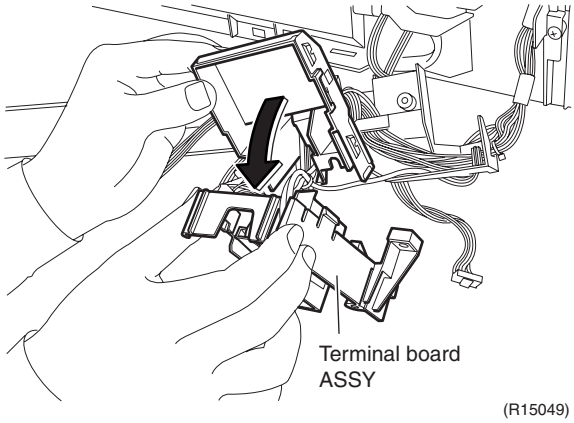
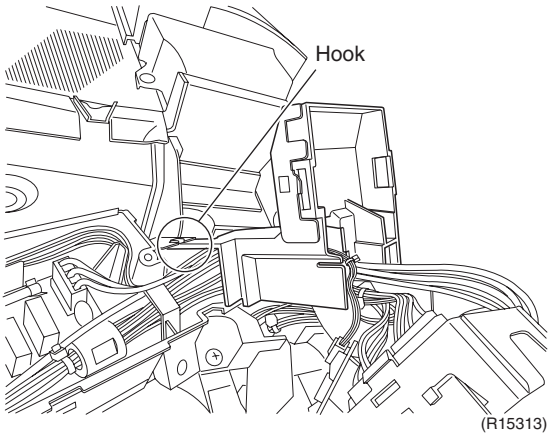
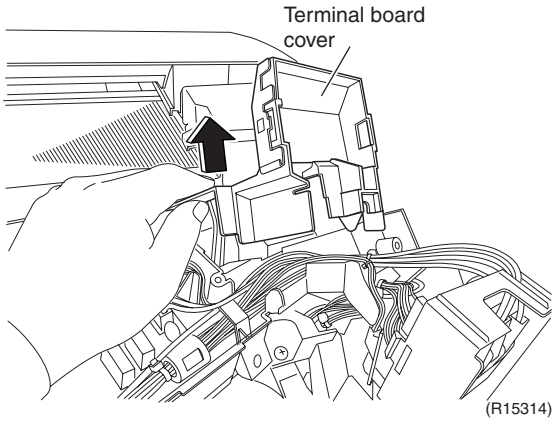
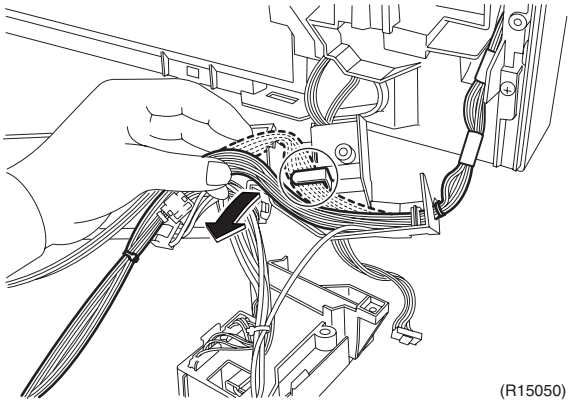
(R15040)

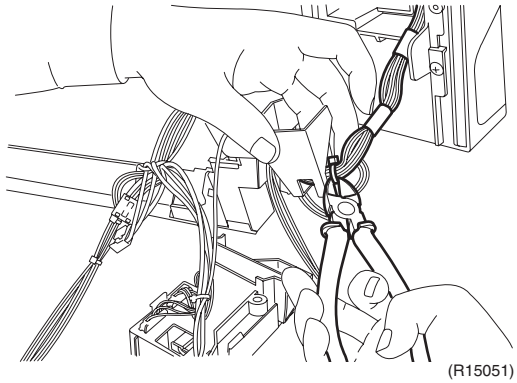
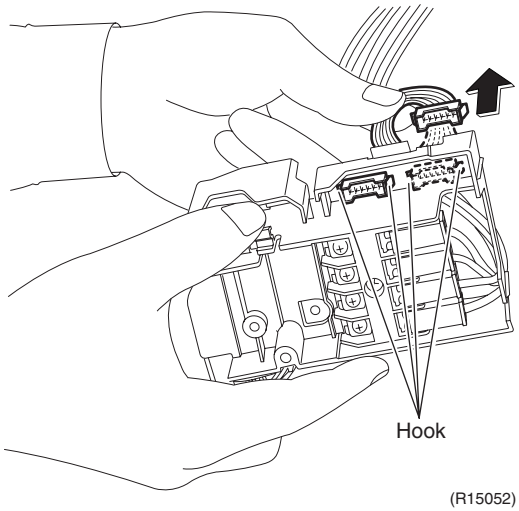
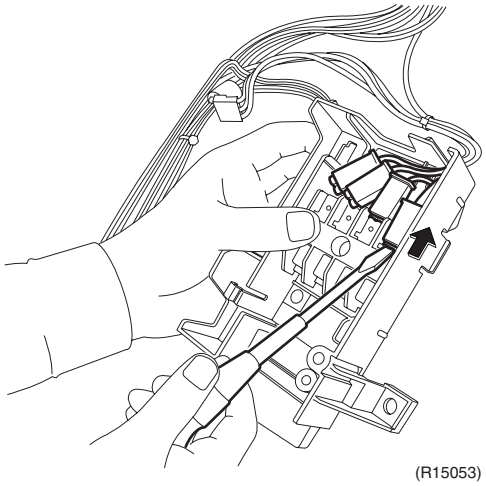
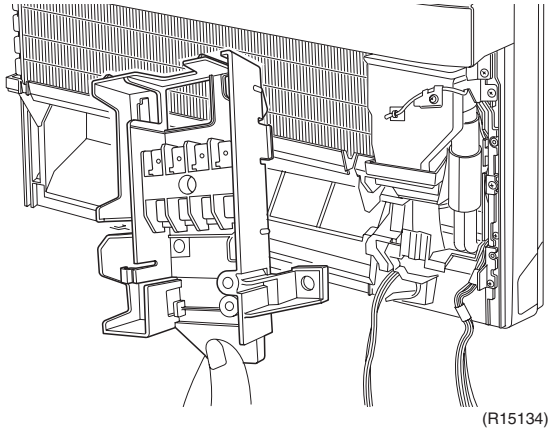


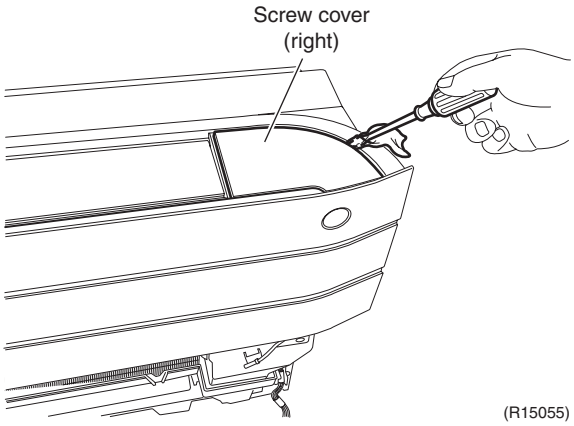
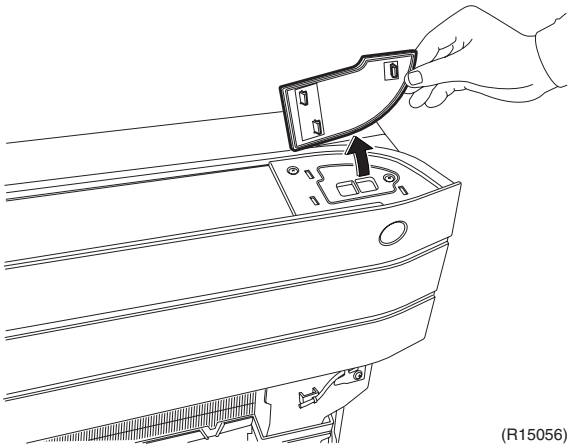
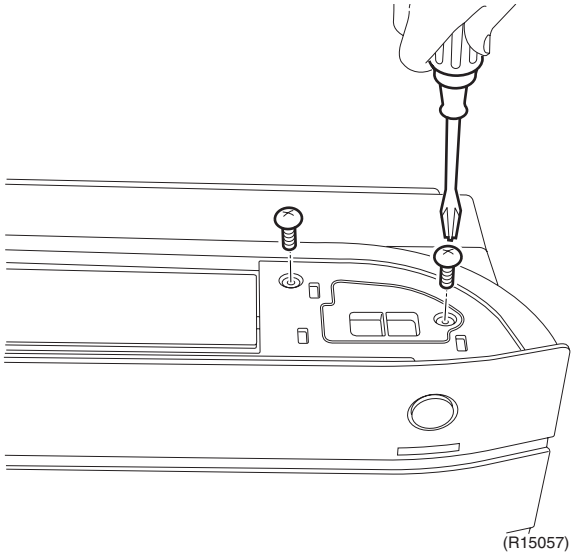
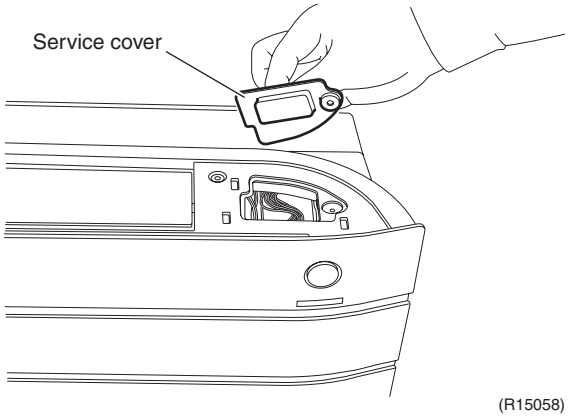
(R15041)

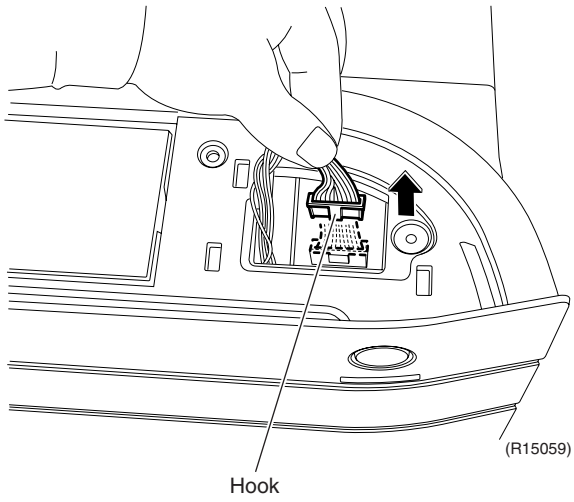
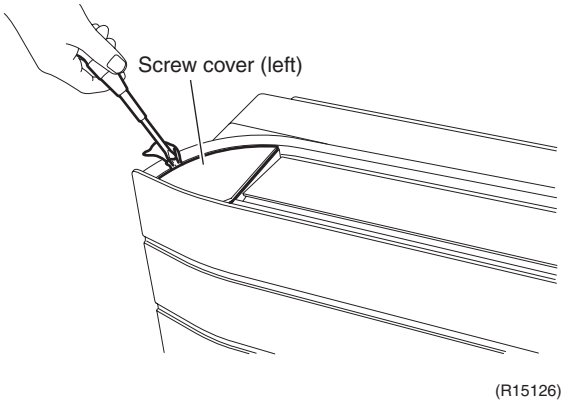
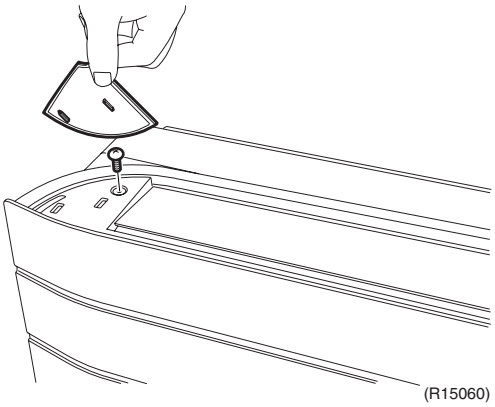
Step	Procedure	Points
9	Remove the main PCB.	 (R15042)
		[S1]: fan motor [S2]: terminal board [S6]: swing motor [S26]: service PCB [S30]: indoor electronic expansion valve coil [S32]: indoor heat exchanger thermistor [S33]: room temperature thermistor [S34]: radiant panel thermistors [S46]: display PCB [FG]: earth ■ Refer to page 8 for detail.
3. Remove the service PCB.		
1	Unfasten the hook.	 (R15043)
2	The service PCB is now easy to manage.	 (R15044)

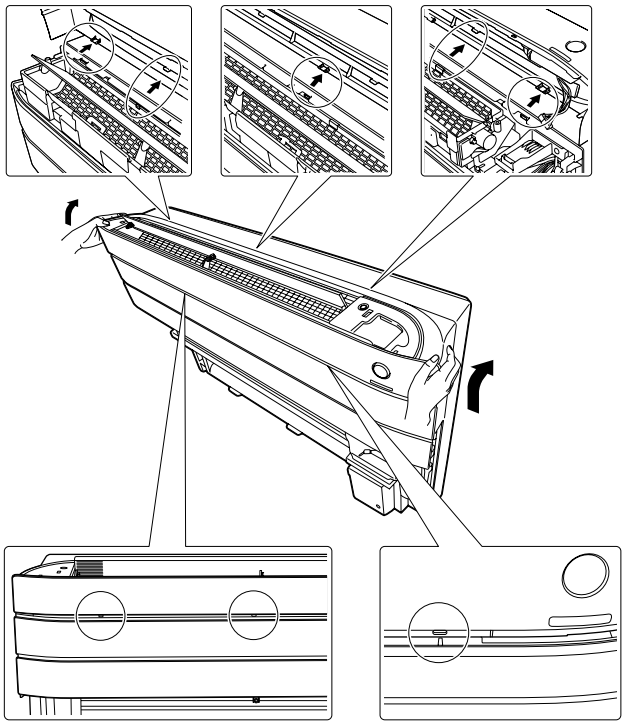
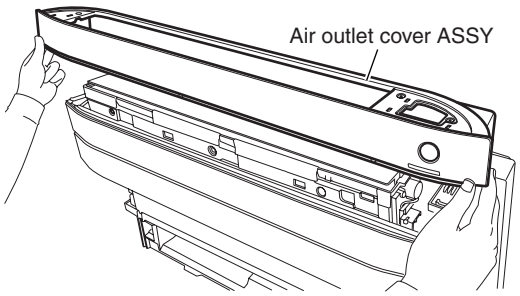
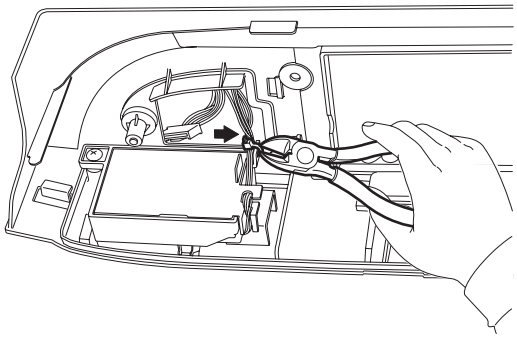
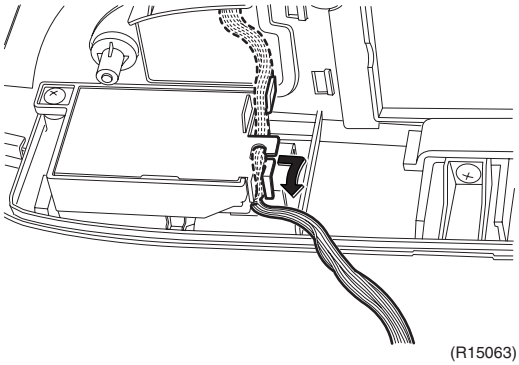
Step	Procedure		Points
3	Unfasten the hook and disconnect the connector for the main PCB [S27].		
4	Remove the service PCB.		[S27]: for main PCB
4. Remove the terminal board ASSY.			
1	Remove the screw.		
2	Unfasten the hook with a flat screwdriver.		

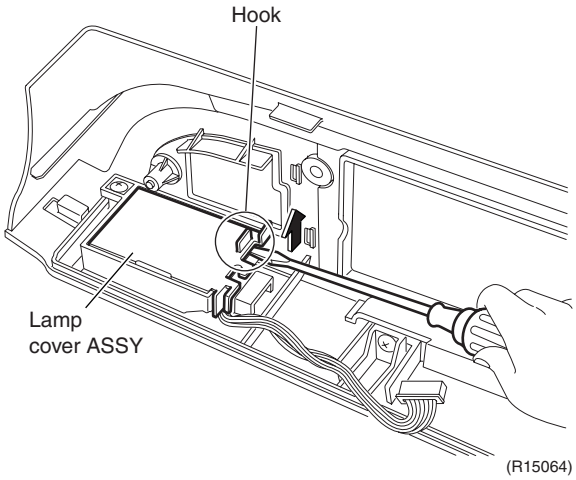
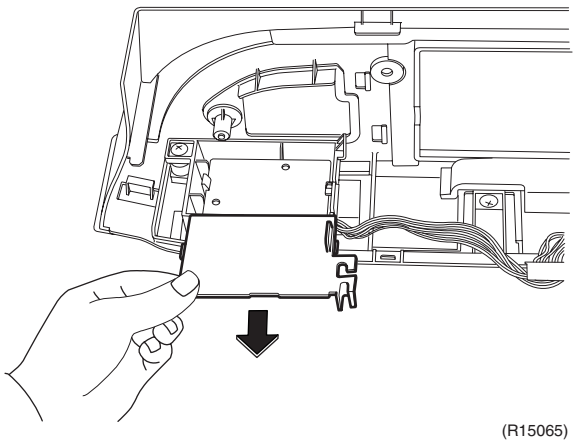
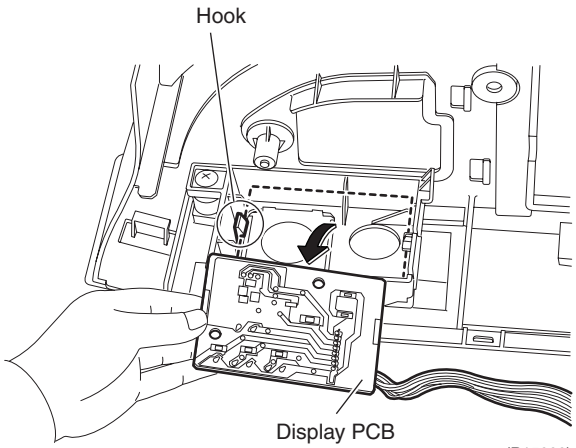
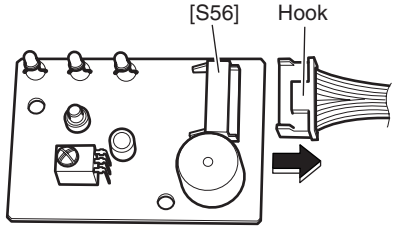
Step	Procedure		Points
3	Release the terminal board ASSY.	 (R15049)	
4	Unfasten the hook.	 (R15313)	
5	Remove the terminal board cover.	 (R15314)	
6	Release the harnesses from the hook.	 (R15050)	

Step	Procedure		Points
7	Cut the clamp.	 (R15051)	
8	Unfasten the 2 hooks of each connector. Pull out the 2 relay connectors.	 (R15052)	Upper (brown): fan motor Lower (red): electronic expansion valve
9	Release the 4 terminals with a flat screwdriver.	 (R15053)	
10	Remove the terminal board ASSY.	 (R15134)	

Step	Procedure	Points
5. Remove the display PCB.		■ Use a piece of cloth to protect the surface of the indoor unit.
1	Remove the screw cover (right) with a flat screwdriver.	 (R15055)  (R15056)
2	Remove the 2 screws.	 (R15057)
3	Remove the service cover.	 (R15058)

Step	Procedure		Points
4	Unfasten the hook and disconnect the relay connector for the display PCB.		
5	Remove the screw cover (left) with a flat screwdriver.		■ Use a piece of cloth to protect the surface of the indoor unit.
6	Remove the screw.		

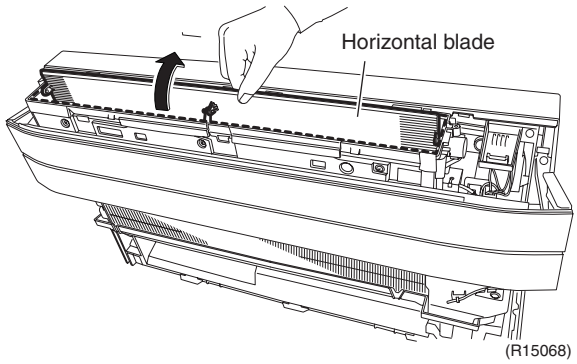
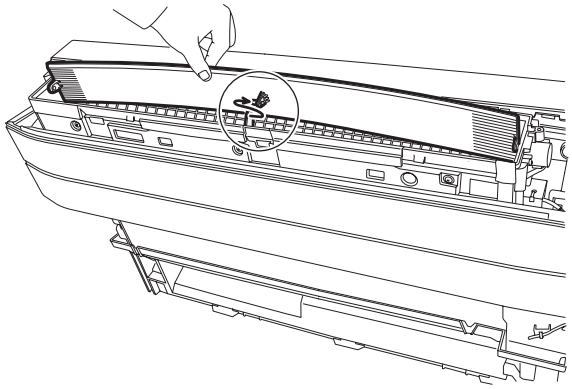
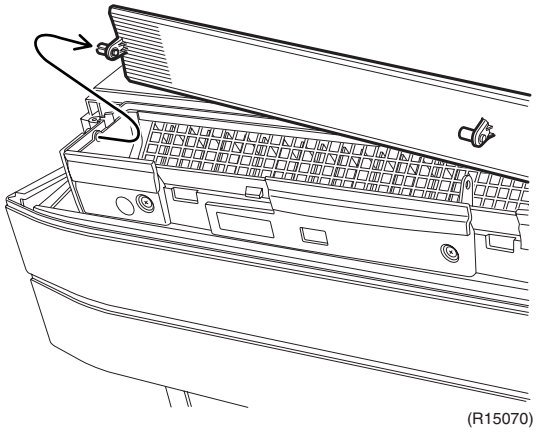
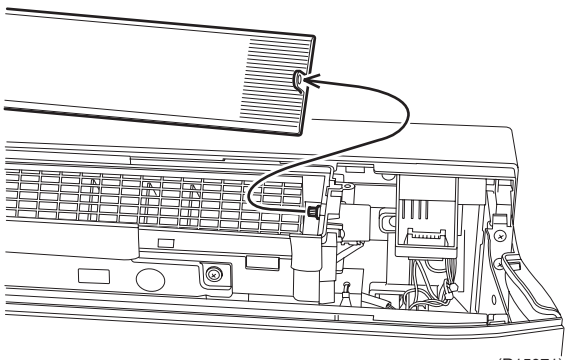
Step	Procedure	Points
7	Unfasten the 8 hooks.  (R15287)	
8	Remove the air outlet cover ASSY.  (R15061)	
9	Turn over the air outlet cover ASSY and cut the clamp.  (R15062)	
10	Release the harnesses from the hooks.  (R15063)	

Step	Procedure		Points
11	Lift up the cover of the lamp cover ASSY with a flat screwdriver.	 (R15064)	
12	Open the cover.	 (R15065)	
13	Unfasten the hook and remove the display PCB.	 (R15066)	
14	Unfasten the hook and disconnect the connector for the main PCB [S56].	 (R15067)	

1.5 Removal of Horizontal Blade

Procedure

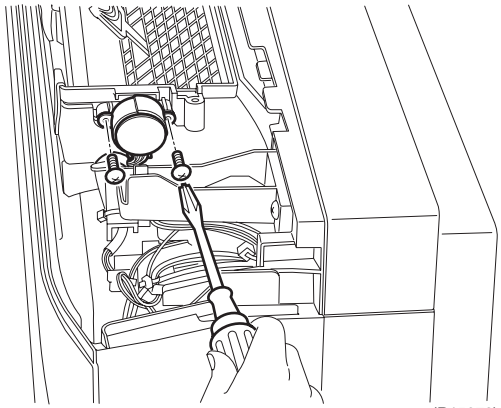
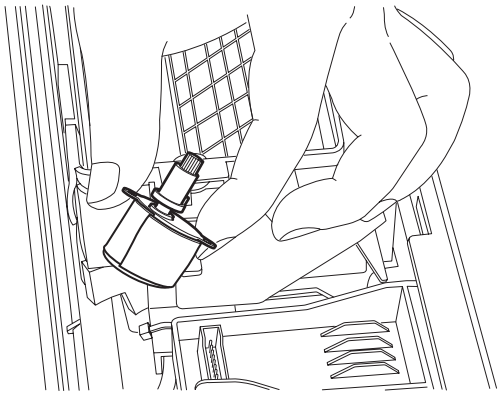
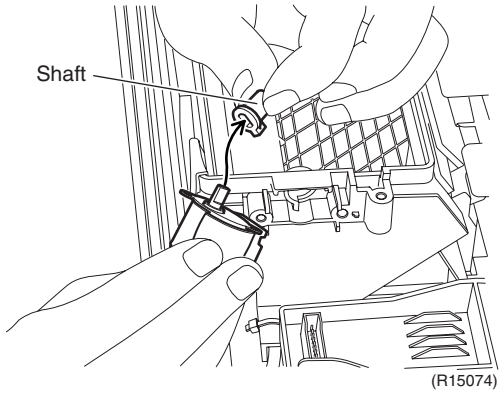
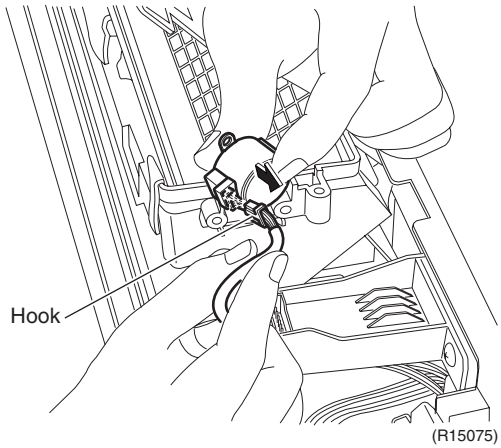
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Open the horizontal blade.	 (R15068)	
2	Bend the horizontal blade and unfasten the center shaft.	 (R15069)	
3	Unfasten the left shaft.	 (R15070)	
4	Unfasten the right shaft and remove the horizontal blade.	 (R15071)	

1.6 Removal of Swing Motor

Procedure

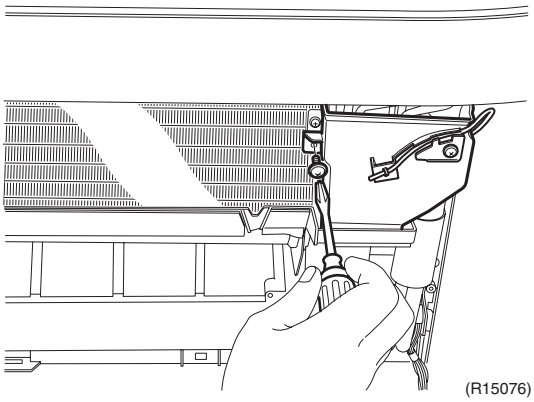
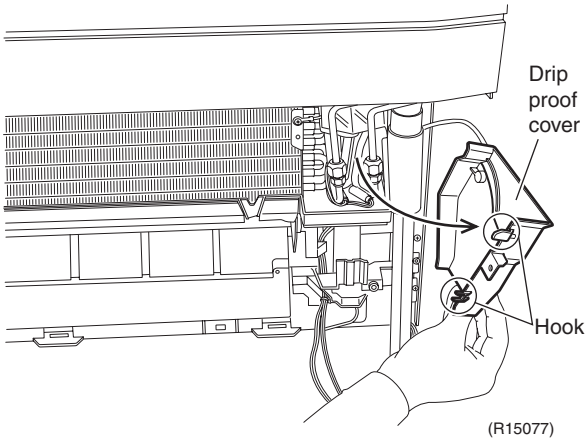
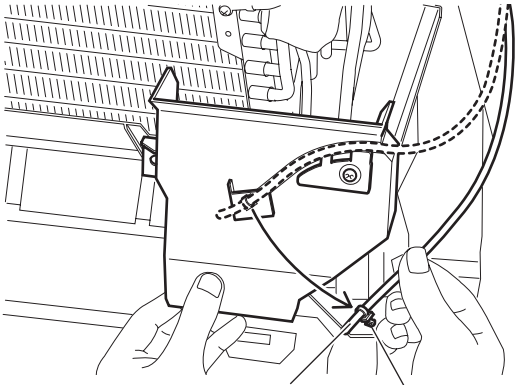
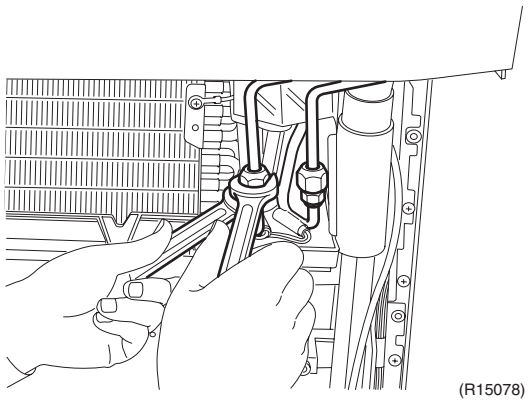
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Remove the 2 screws.	 (R15072)	
2	Remove the swing motor.	 (R15073)	
3	Remove the shaft.	 (R15074)	
4	Unfasten the hook and disconnect the connector.	 (R15075)	

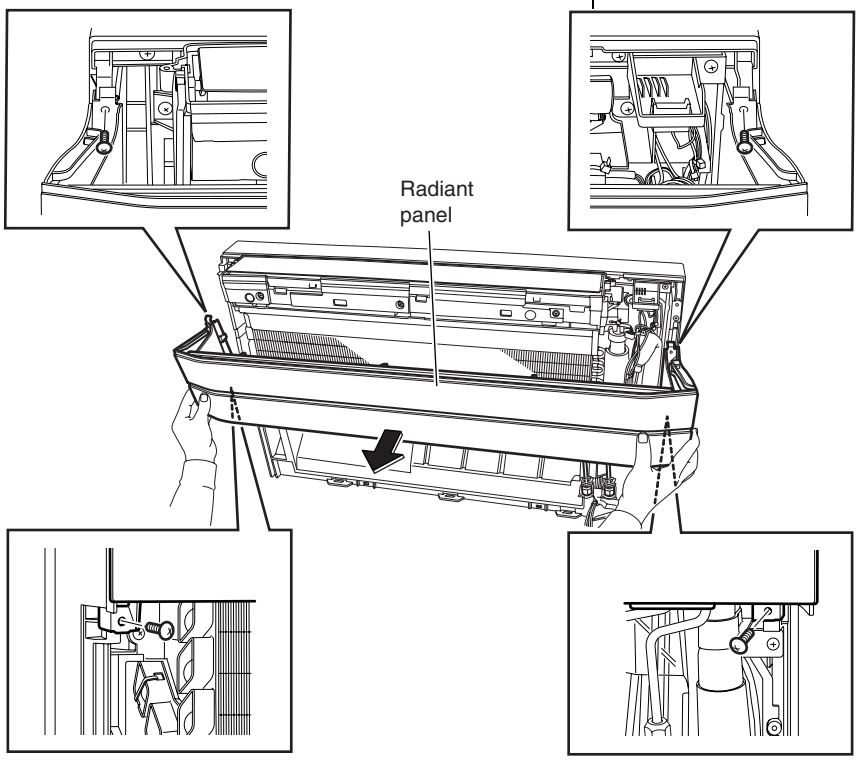
1.7 Removal of Radiant Panel

Procedure

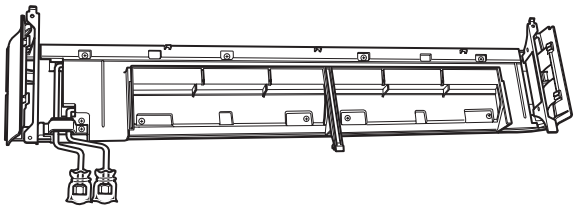
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Remove the screw.	 (R15076)	
2	Unfasten the 2 hooks and remove the drip proof cover.	 (R15077)	
3	Release the room temperature thermistor from the drip proof cover.	 (R15106)	
4	Disconnect the connecting sections of the 2 pipings for the radiant panel.	 (R15078)	■ When the pipings are disconnected, protect the both openings from entering moisture.

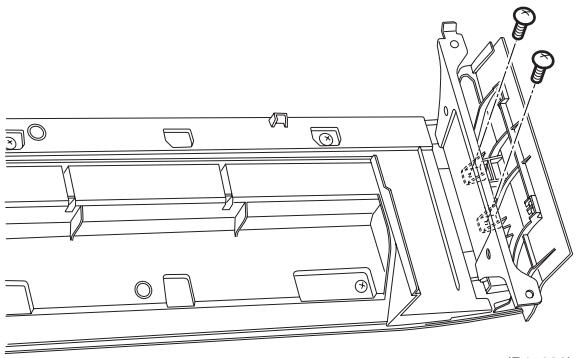
Step	Procedure	Points
5	Remove the 2 lower screws on the right and left side of the radiant panel.	
6	Remove the 2 upper screws on the right and left side of the radiant panel.	
7	Remove the radiant panel.	
8	Turn over the radiant panel.	
9	Remove the 2 screws on the left.	
10	Remove the left panel.	



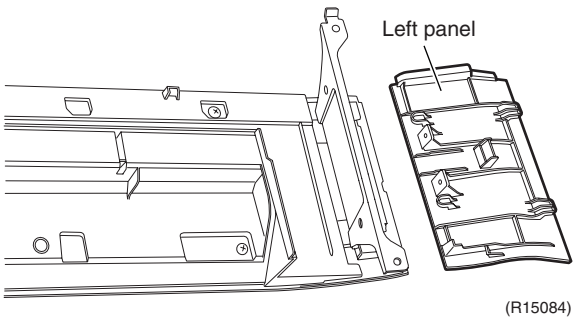
(R15081)



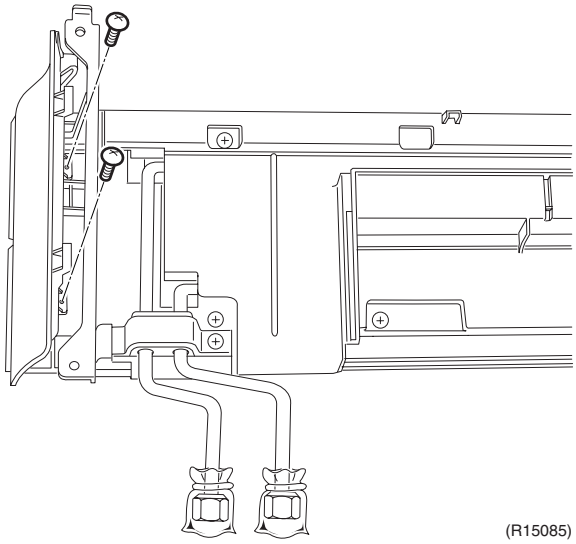
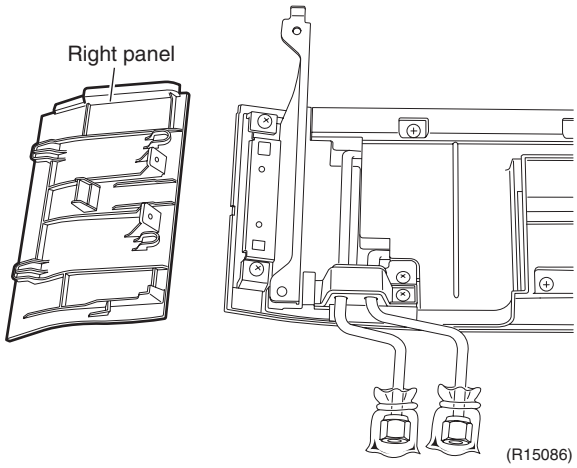
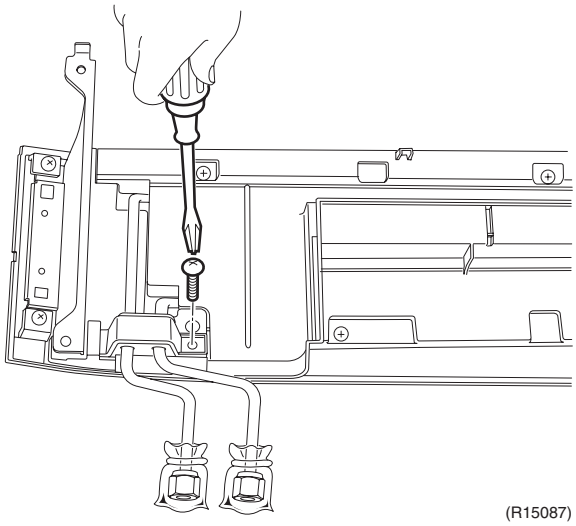
(R15082)

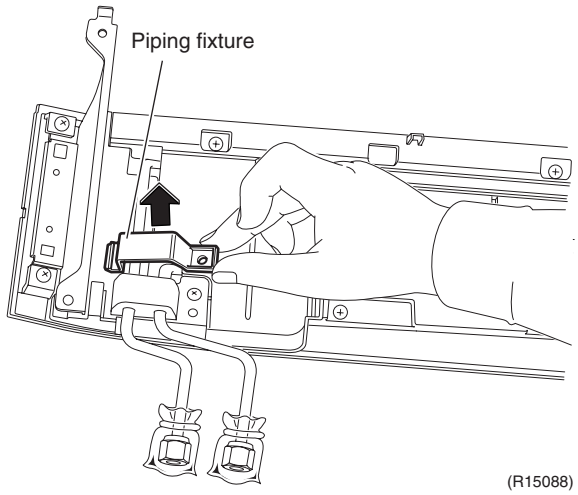
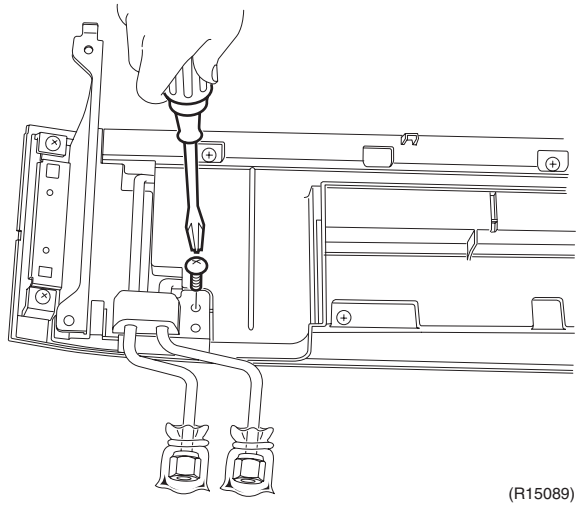
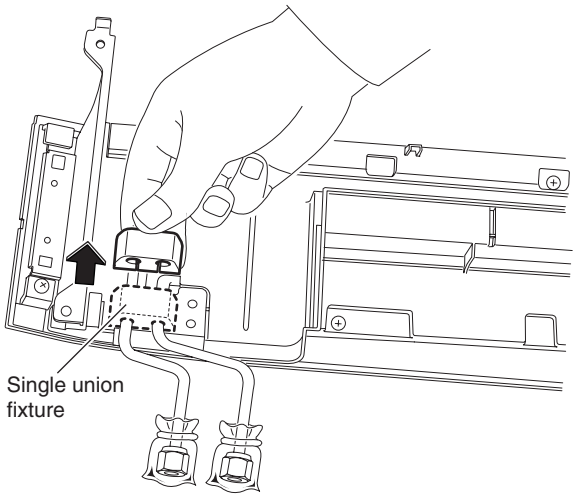


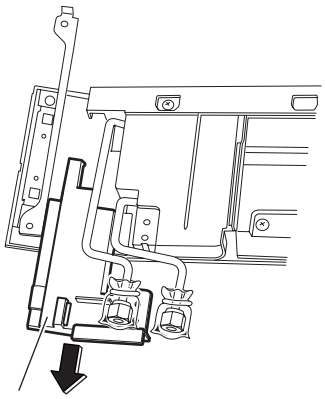
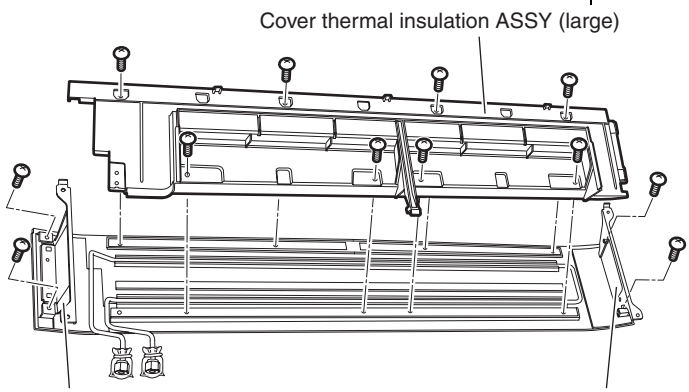
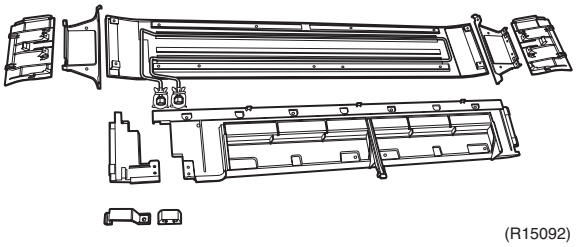
(R15083)



(R15084)

Step	Procedure		Points
11	Remove the 2 screws on the right.	 (R15085)	
12	Remove the right panel.	 (R15086)	
13	Remove the screw.	 (R15087)	■ M4 × 16

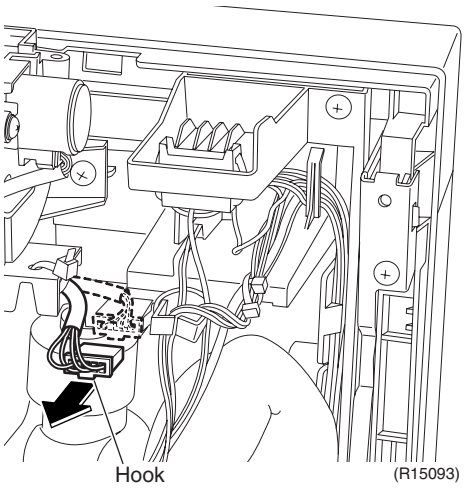
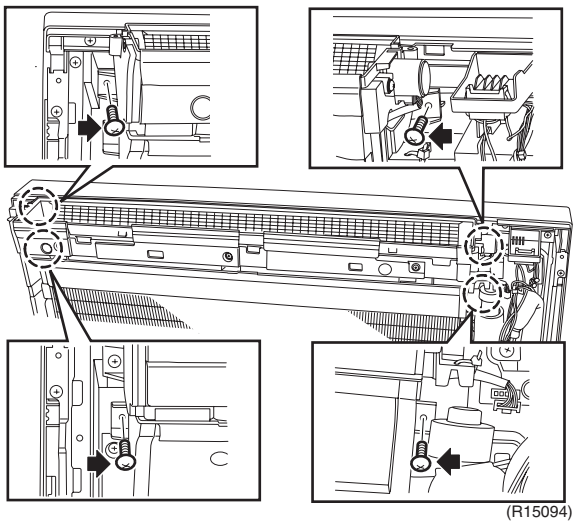
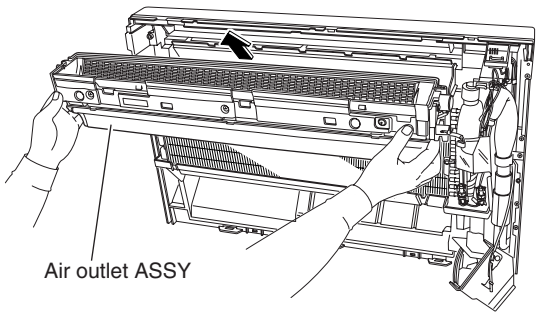
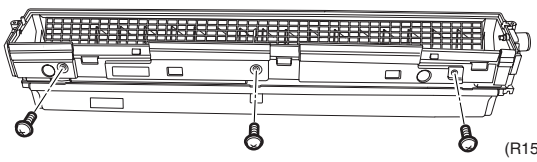
Step	Procedure		Points
14	Remove the piping fixture.	 (R15088)	
15	Remove the screw.	 (R15089)	
16	Remove the single union fixture.	 (R15129)	

Step	Procedure		Points
17	Remove the cover thermal insulation ASSY (small).	 (R15090)	
18	Remove the 8 screws and remove the cover thermal insulation ASSY (large).	 (R15091)	
19	Remove the 2 screws to remove the mounting plate (right).		
20	Remove the 2 screws to remove the mounting plate (left).	 (R15092)	

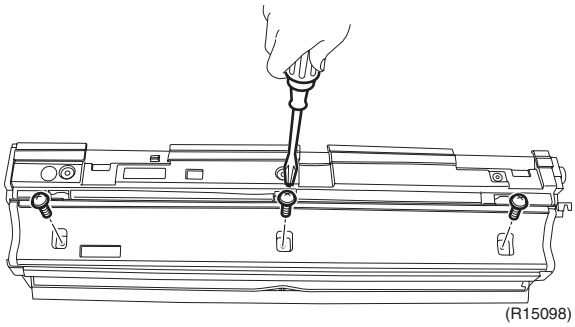
1.8 Removal of Air Outlet ASSY

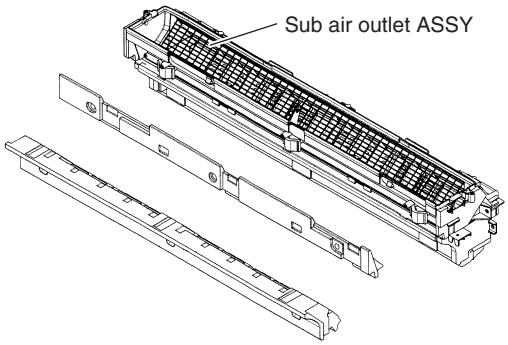
Procedure

Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

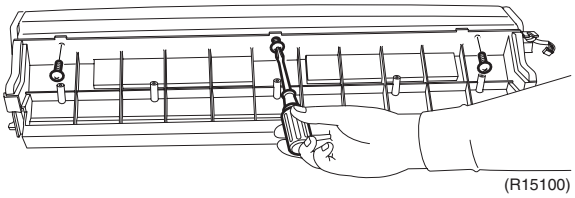
Step	Procedure		Points
1	Unfasten the hook and disconnect the relay connector for the swing motor.	 (R15093)	**Preparation** ■ Remove the horizontal blade according to the “Removal of Horizontal Blade”.
2	Remove the 4 screws.	 (R15094)	
3	Remove the air outlet ASSY.	 (R15135)	
4	Remove the 3 screws of the air outlet ASSY.	 (R15097)	

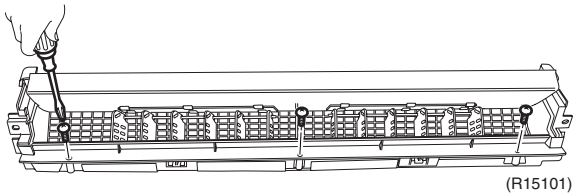
Step	Procedure	Points
5	Turn over the air outlet ASSY and remove the 3 screws.	
6	Remove the sub air outlet ASSY.	
7	Remove the 3 screws of the sub air outlet ASSY.	
8	Turn over the sub air outlet ASSY and remove the 3 screws.	
9	To divide the sub air outlet ASSY, unfasten the 4 hooks and release the hook of the upper air outlet ASSY from the interlock rod.	

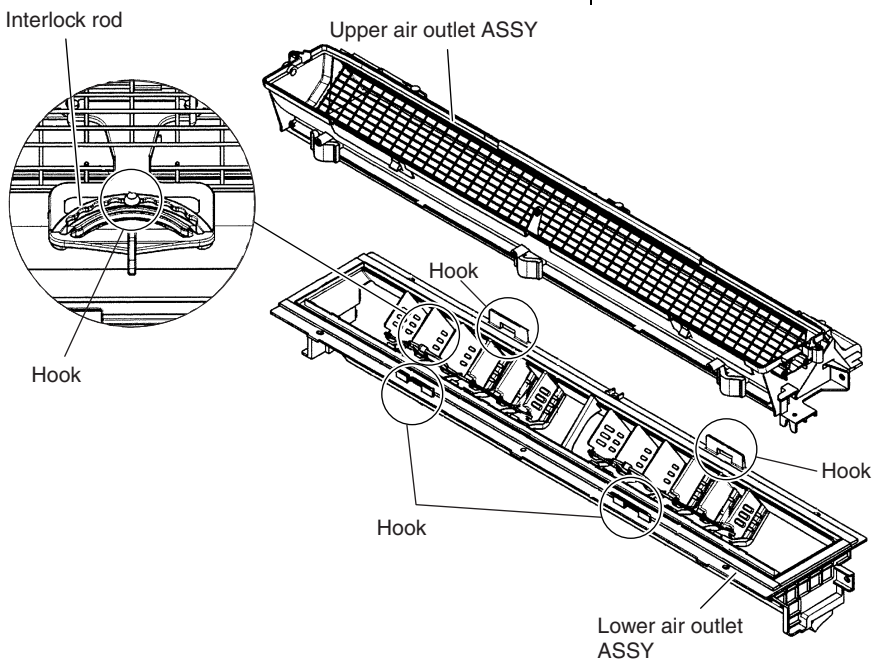

(R15098)



(R15288)


(R15100)


(R15101)

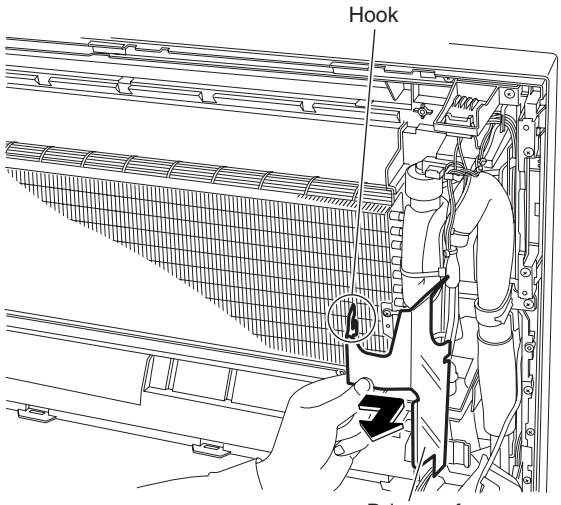
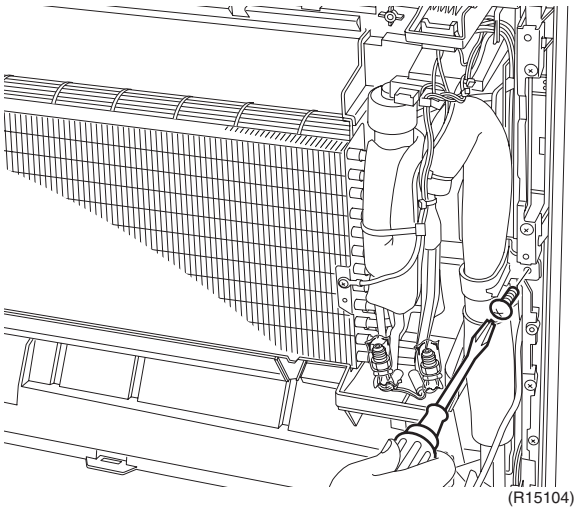
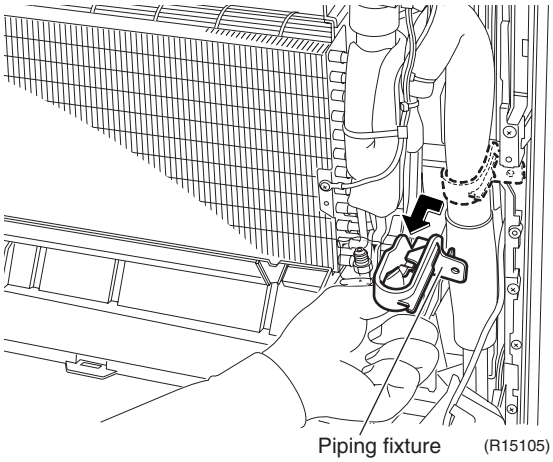


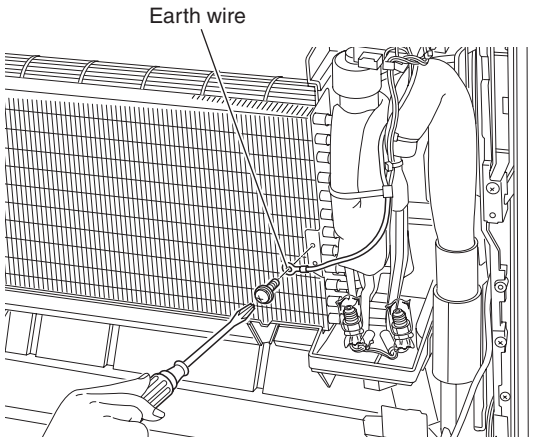
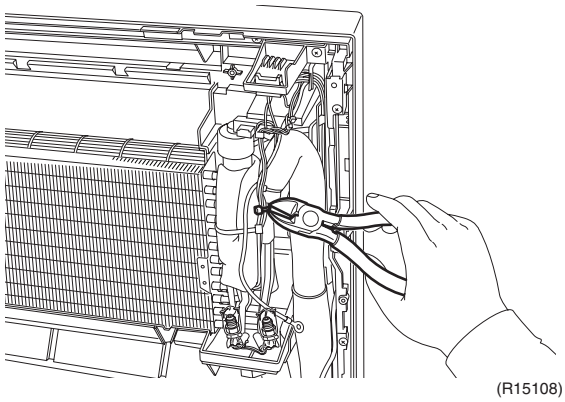
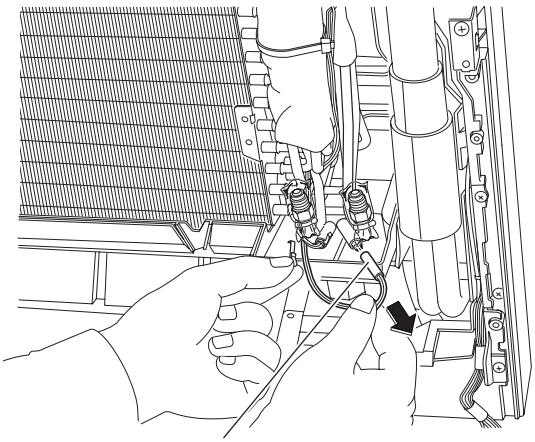
(R15290)

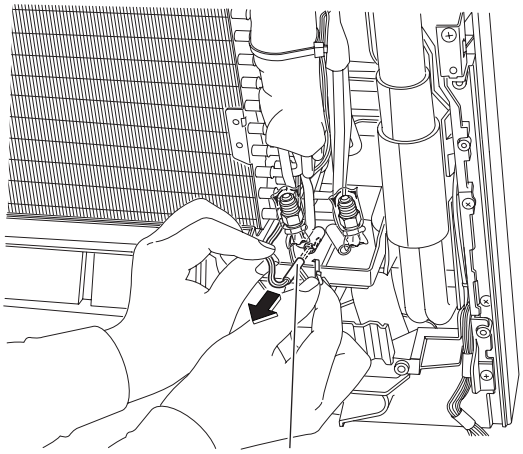
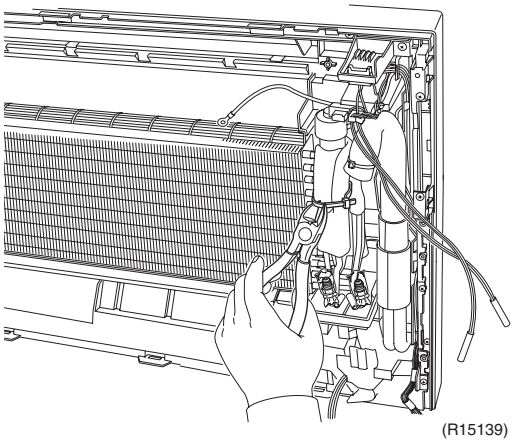
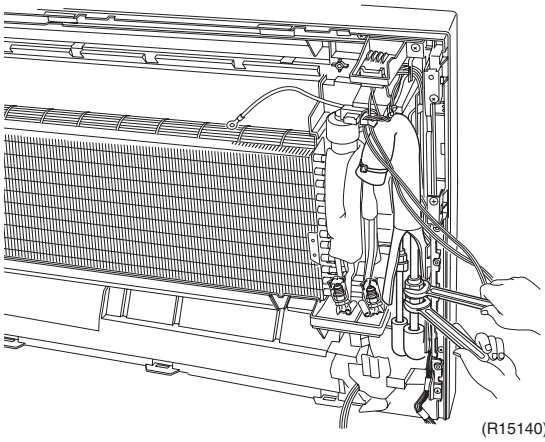
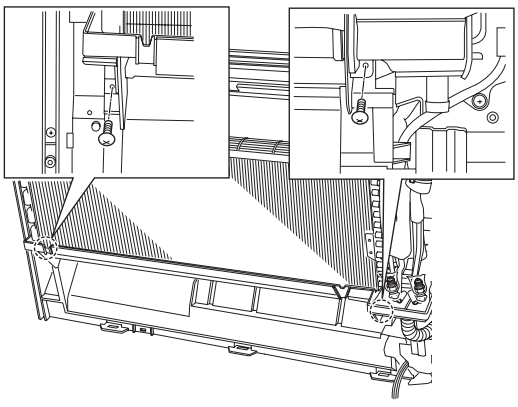
1.9 Removal of Drain Pan / Indoor Heat Exchanger ASSY

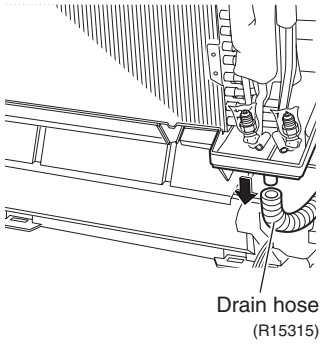
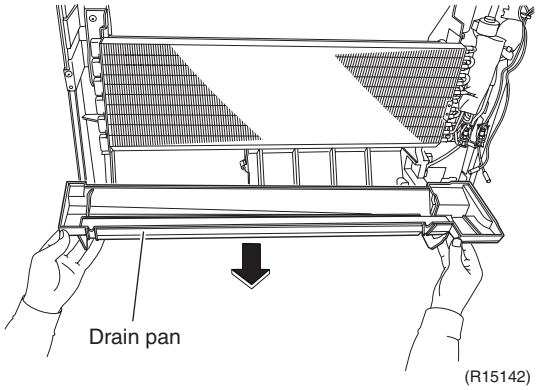
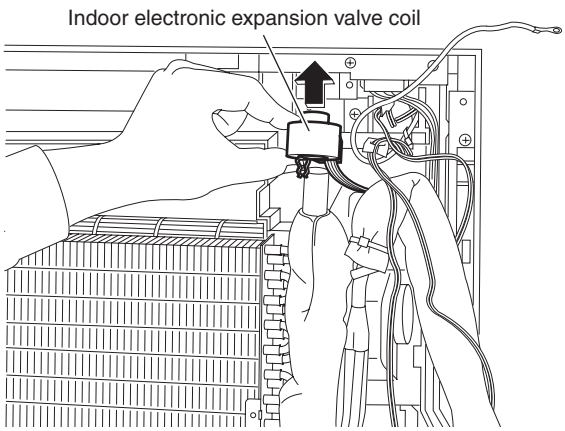
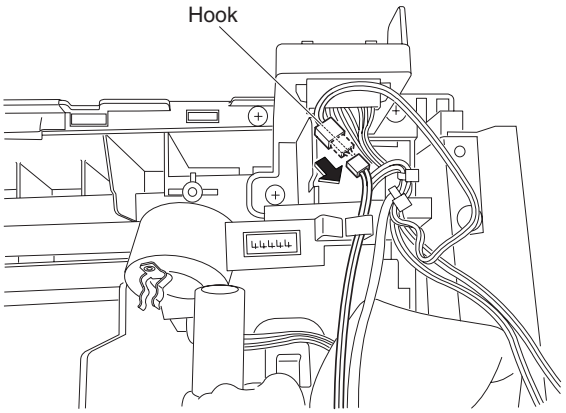
Procedure

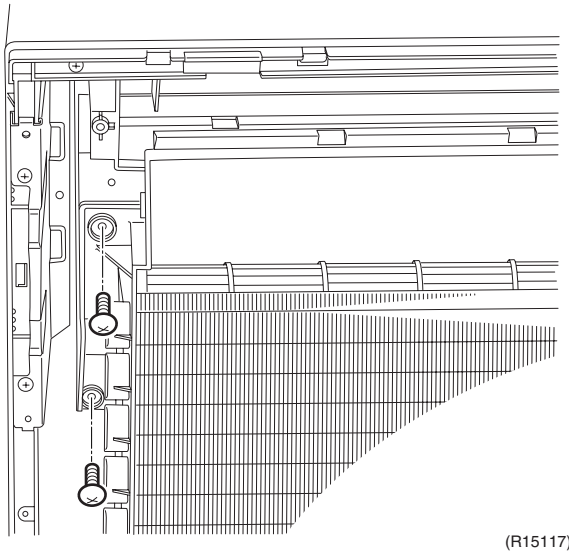
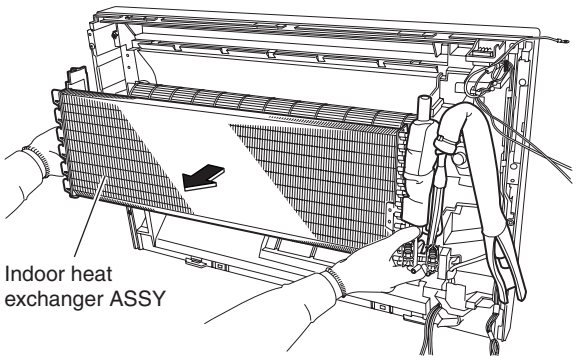
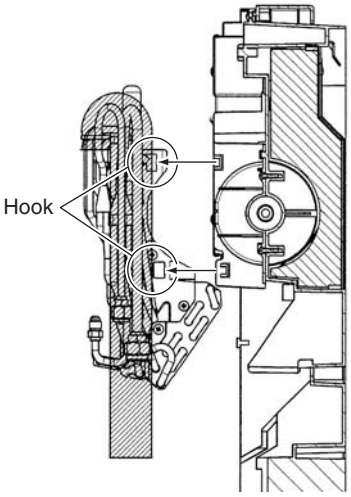
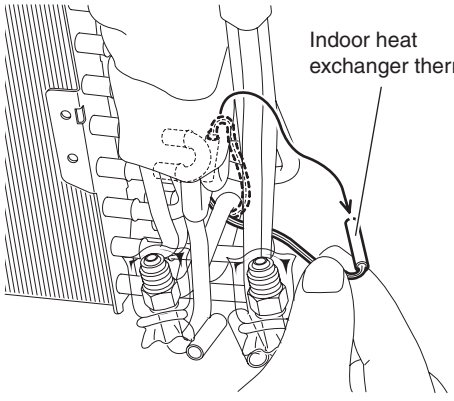
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1. Remove the drain pan.		 (R15103)	■ The drip proof sheet is transparent.
1	Unfasten the hook and remove the drip proof sheet.		
2	Remove the screw.	 (R15104)	
3	Remove the piping fixture.	 (R15105)	

Step	Procedure		Points
4	Remove the screw of the earth wire.	 (R15136)	
5	Cut the clamp.	 (R15108)	
6	Pull out the radiant panel thermistor (ϕ 6).	 Radiant panel thermistor (ϕ 6) (R15137)	■ Take care not to lose the clip of thermistor.

Step	Procedure		Points
7	Pull out the radiant panel thermistor (ϕ 4).	 Radiant panel thermistor (ϕ 4) (R15138)	■ Take care not to lose the clip of thermistor.
8	Cut the clamp.	 (R15139)	
9	Disconnect the connecting sections of the liquid piping and the gas piping.	 (R15140)	■ When the pipings are disconnected, protect the both openings from entering moisture.
10	Remove the 2 screws.	 (R15141)	

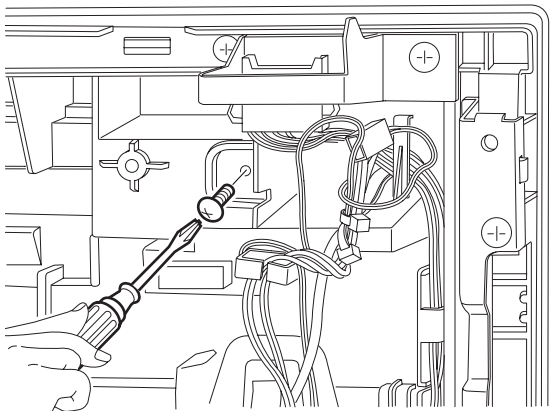
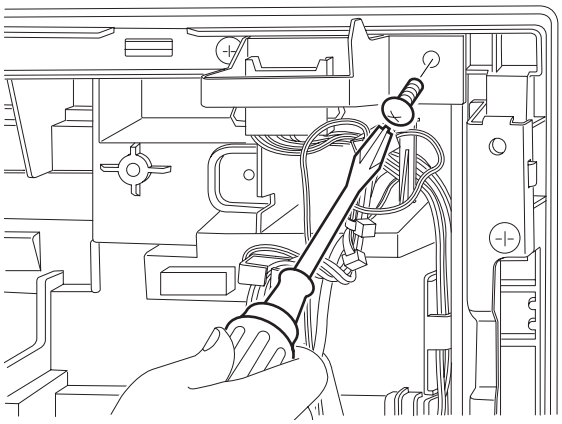
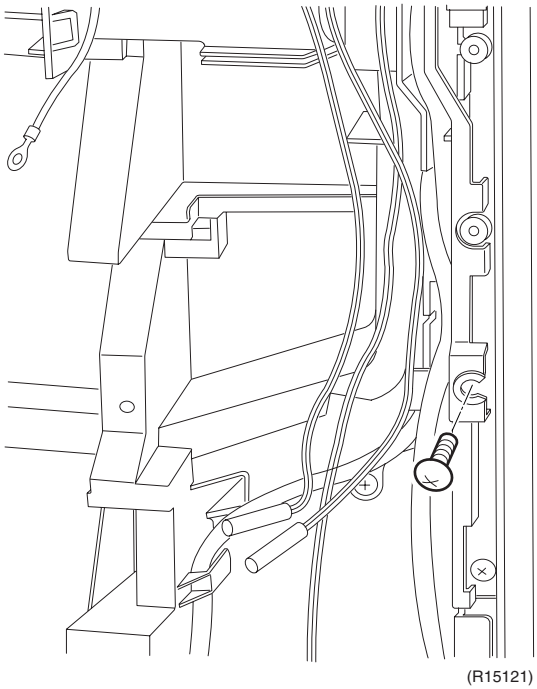
Step	Procedure		Points
11	Disconnect the drain hose.	 (R15315)	■ Be careful not to wet the floor with drain.
12	Remove the drain pan.	 (R15142)	
2. Remove the indoor heat exchanger ASSY.			■ There is a hook inside the indoor electronic expansion valve coil. Do not deform the hook.
1	Remove the indoor electronic expansion valve coil.	 (R15113)	
2	Unfasten the hook and disconnect the relay connector for the indoor heat exchanger thermistor.	 (R15316)	

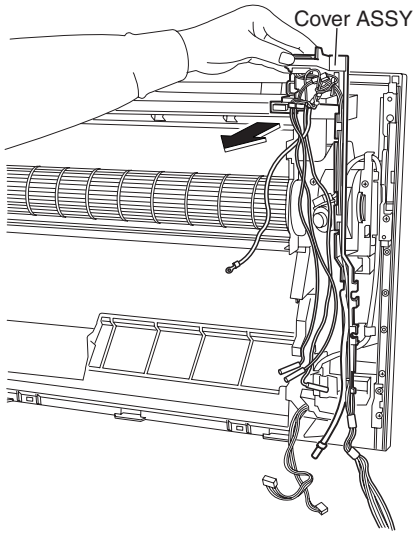
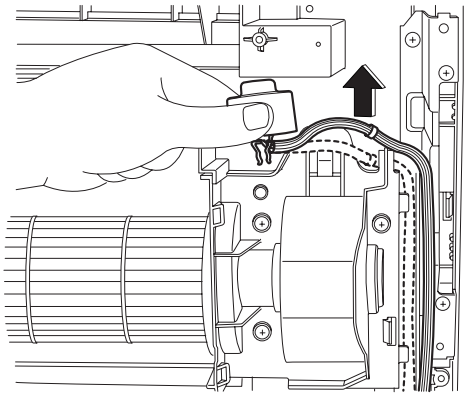
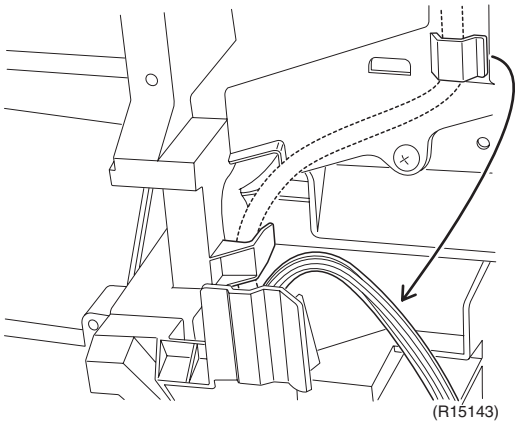
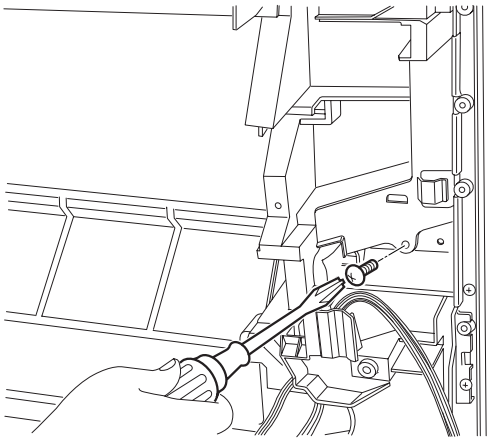
Step	Procedure		Points
3	Remove the 2 screws on the left side.	 (R15117)	**Caution** **When removing or reassembling the indoor heat exchanger, be sure to wear gloves or wrap it with cloth before proceeding to the work. (You may be injured by the fins.)**
4	Unfasten the 2 hooks on the right and remove the indoor heat exchanger ASSY.	 (R15118)	■ The indoor heat exchanger ASSY has 2 hooks on the right.  (R15324)
5	Pull out the indoor heat exchanger thermistor.	 (R15111)	

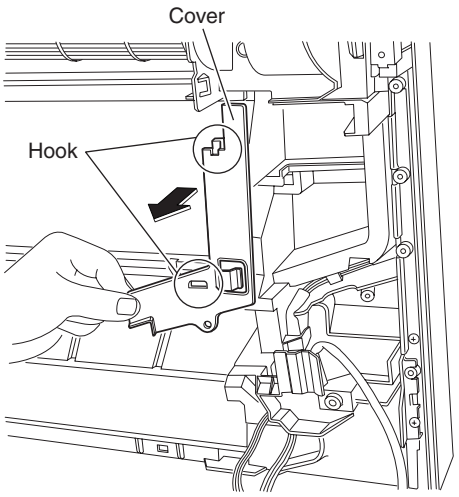
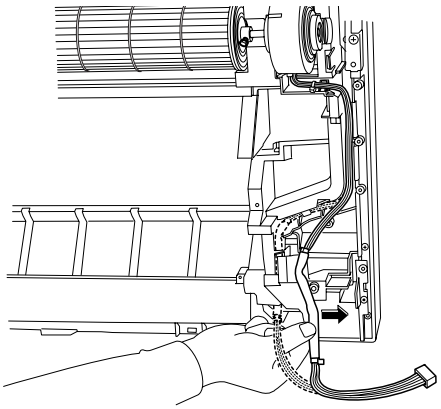
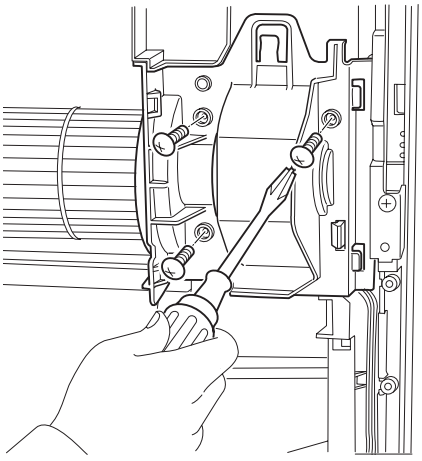
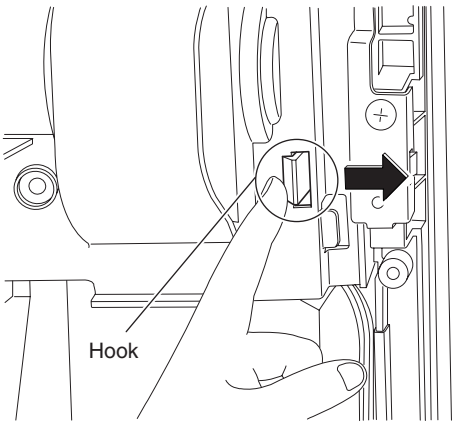
1.10 Removal of Fan Rotor / Fan Motor

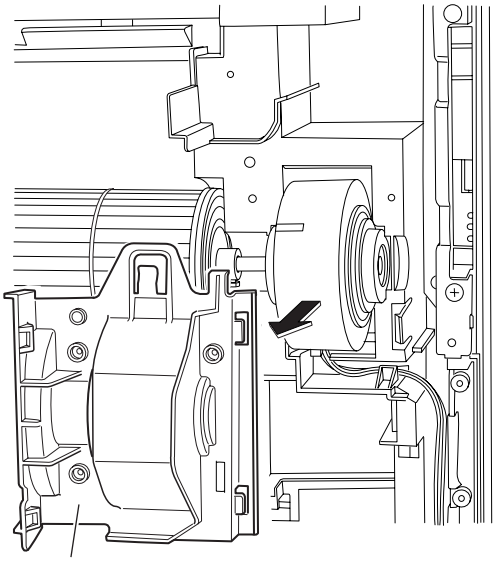
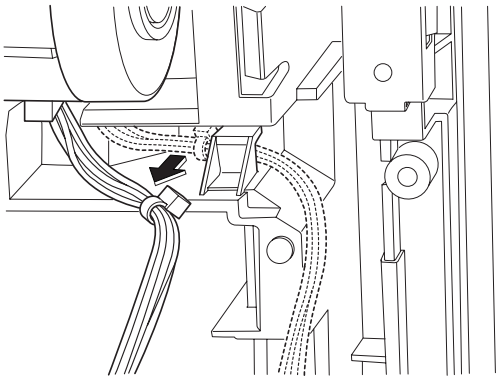
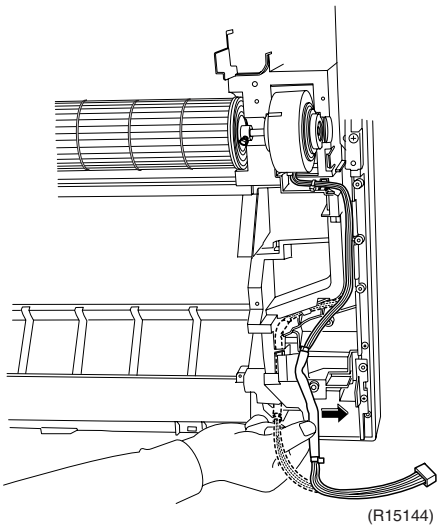
Procedure

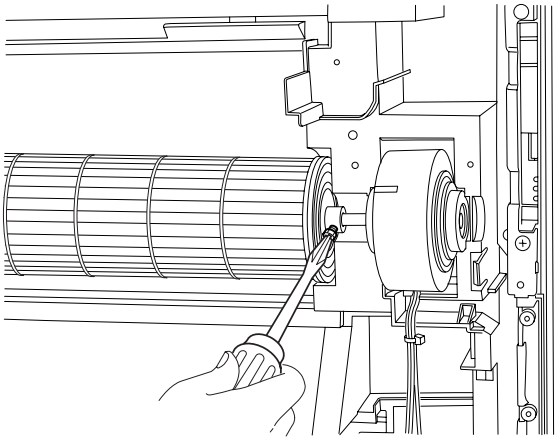
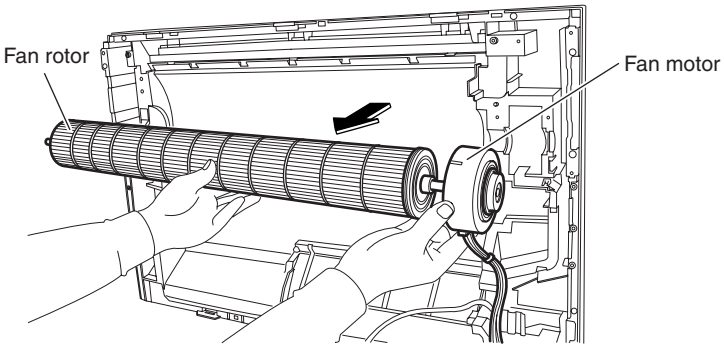
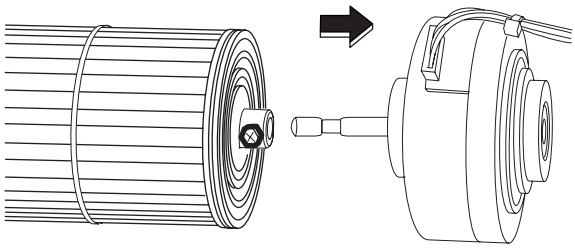
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Remove the 3 screws.	 (R15119)  (R15120)  (R15121)	

Step	Procedure		Points
2	Remove the cover ASSY.	 (R15122)	
3	Release the harnesses for the electronic expansion valve coil from the hook (upper).	 (R15123)	
4	Release the harnesses for the electronic expansion valve coil from the hook (lower).	 (R15143)	
5	Remove the screw.	 (R15125)	

Step	Procedure		Points
6	Unfasten the 2 hooks and remove the cover.	 (R15146)	
7	Release the harnesses for the electronic expansion valve coil from the hooks.	 (R15144)	
8	Remove the 3 screws.	 (R15145)	
9	Unfasten the hook.	 (R15147)	

Step	Procedure		Points
10	Remove the motor cover.	 (R15148)	
11	Release the harnesses for the fan motor from the hook.	 (R15149)	
12	Release the harnesses for the fan motor from the hooks.	 (R15144)	

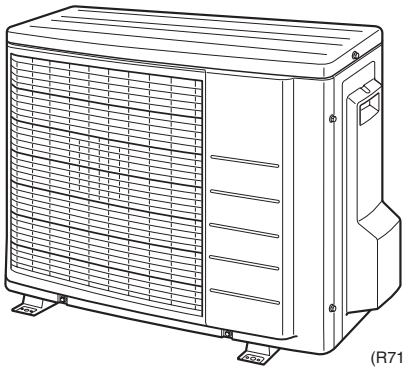
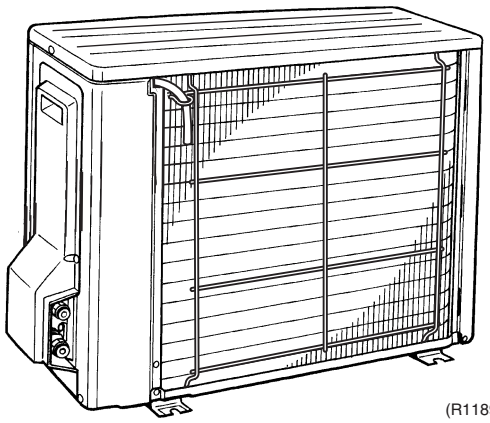
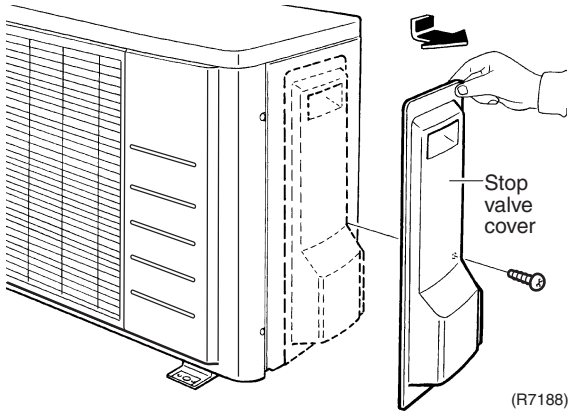
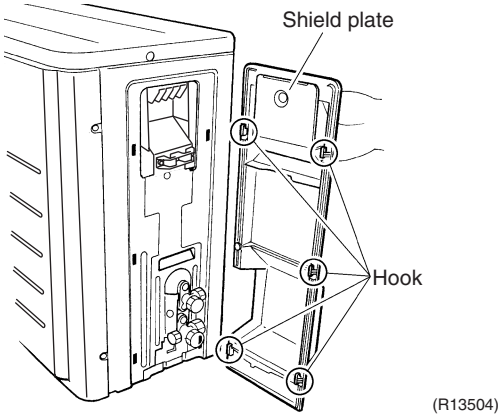
Step	Procedure		Points
13	Loosen the lock screw.	 (R15317)	■ You can remove the fan motor by loosening the screw. You do not need to remove the screw.
14	Remove the fan rotor and the fan motor.	 (R15150)	
15	Remove the fan motor.	 (R15318)	

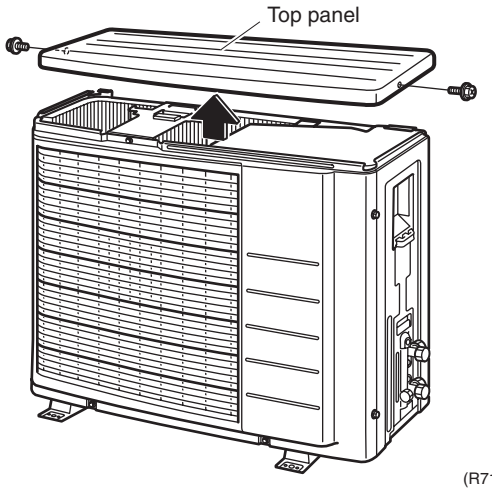
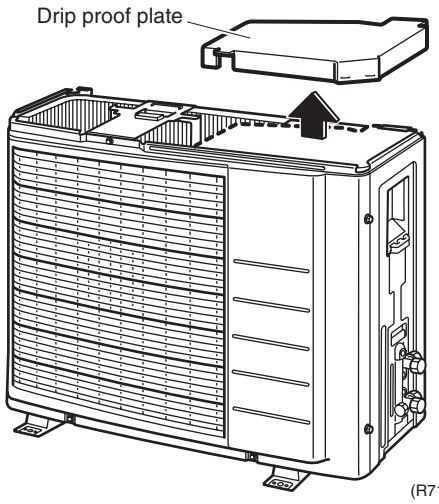
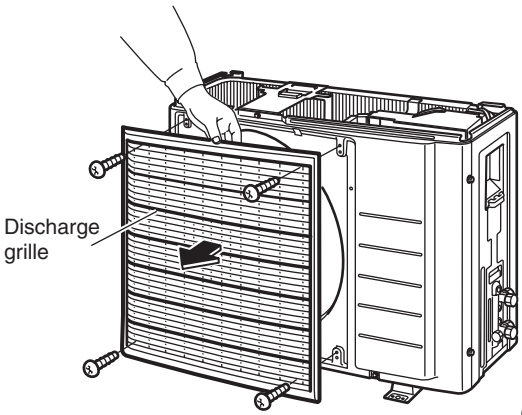
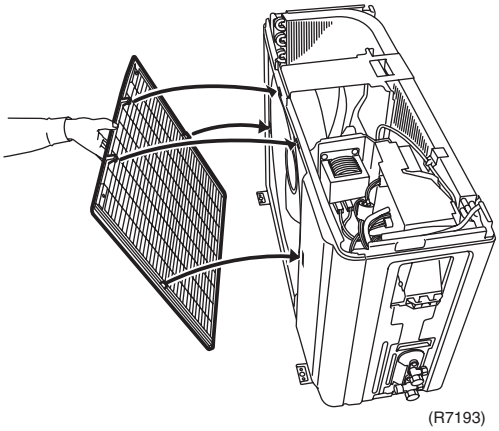
2. Outdoor Unit - RXG25/35K2V1B

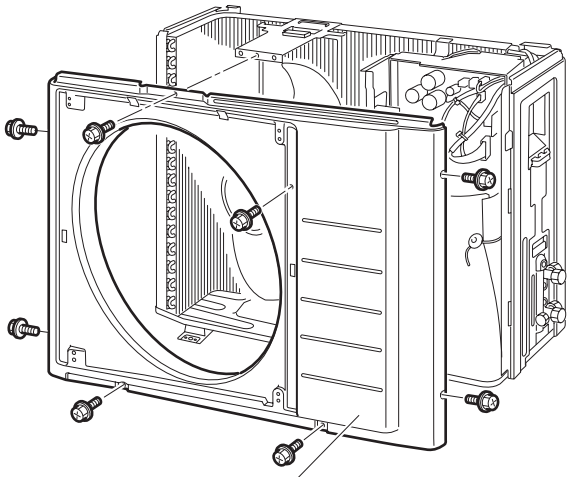
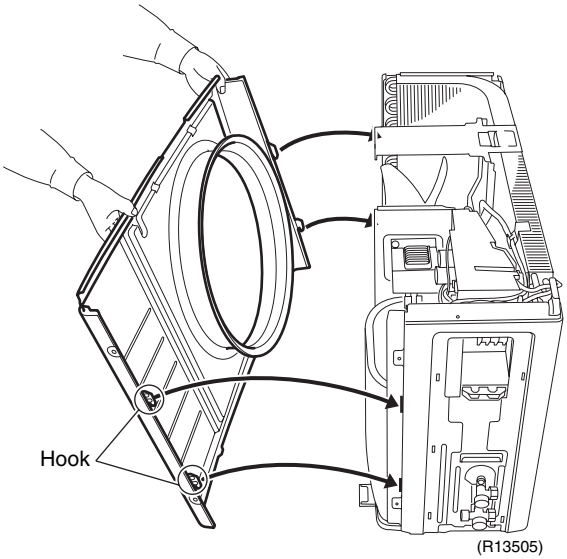
2.1 Removal of Outer Panels / Fan Motor

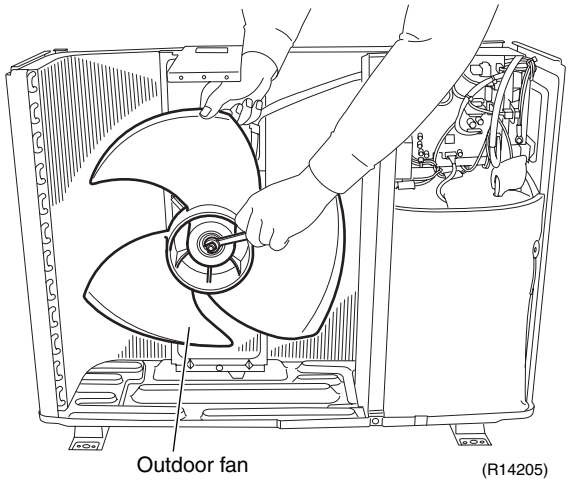
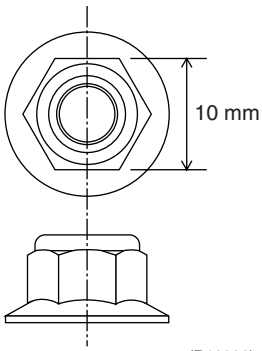
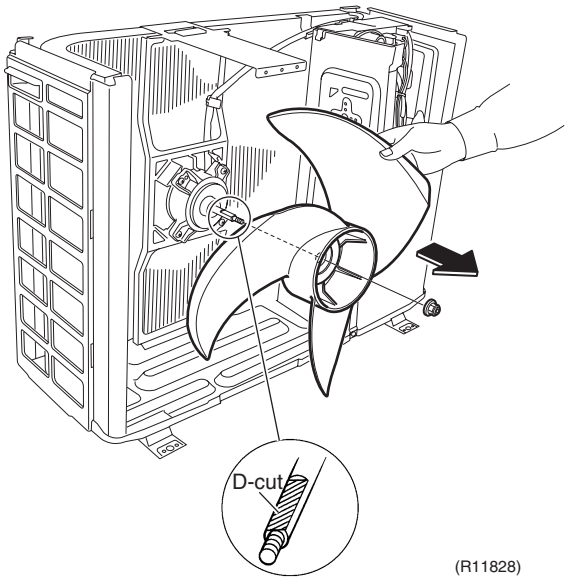
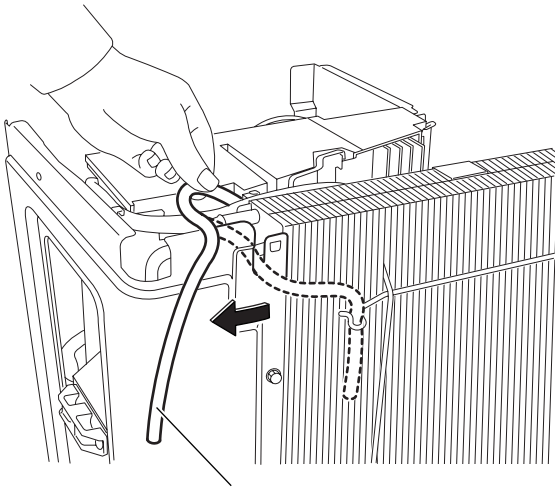
Procedure

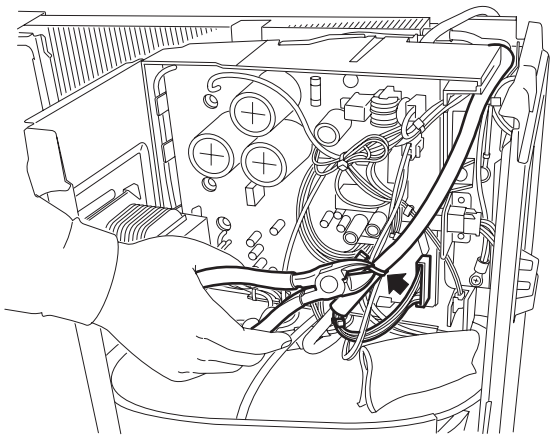
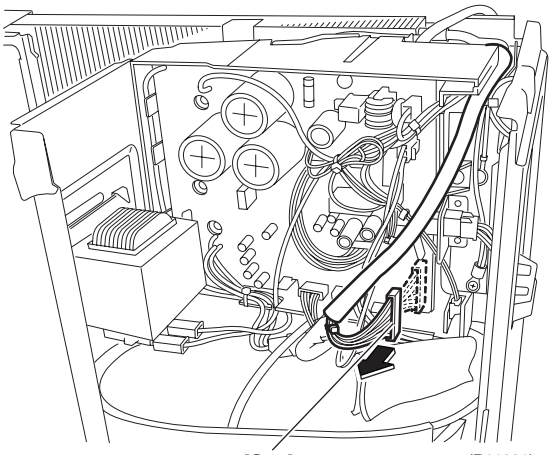
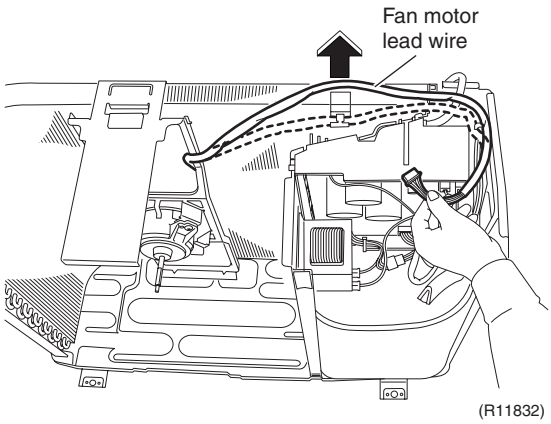
Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

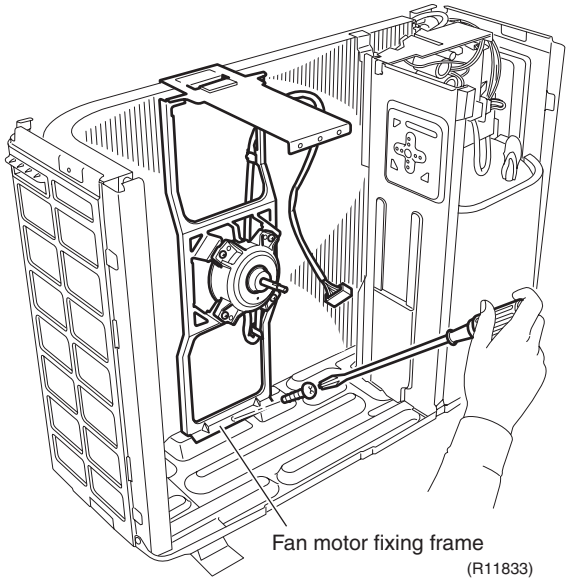
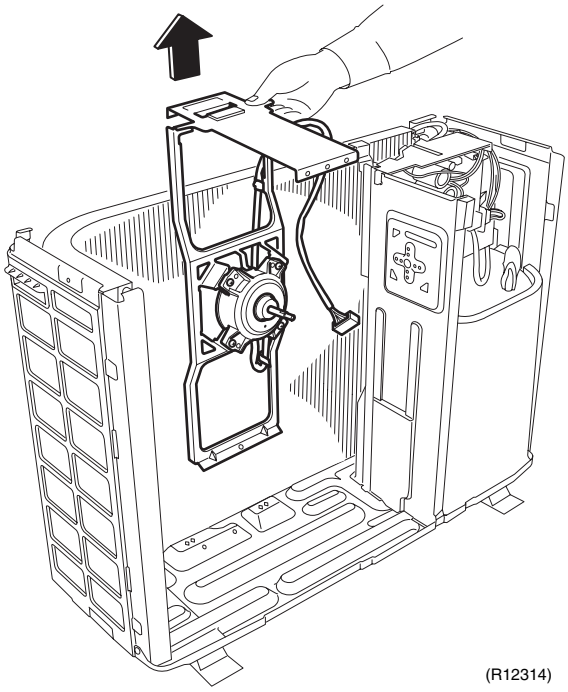
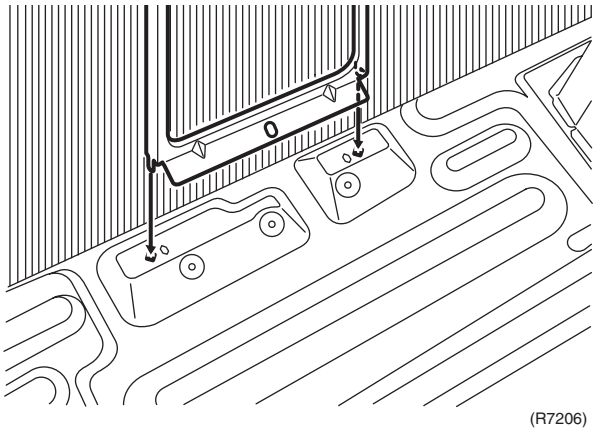
Step	Procedure	Points
1. Appearance features	 (R7186)  (R11890)	■ Take care not to cut your finger by the fins of the outdoor heat exchanger.
2. Remove the panels. 1 Remove the screw of the stop valve cover. Pull down the stop valve cover and remove it.	 (R7188)  (R13504)	■ The stop valve cover is united with the shield plate. ■ When reassembling, make sure to fit the 5 hooks.

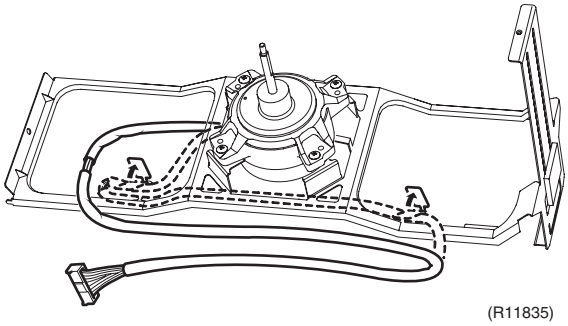
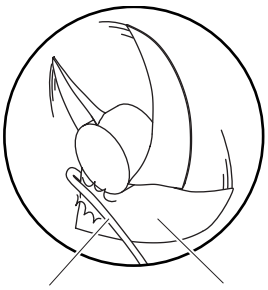
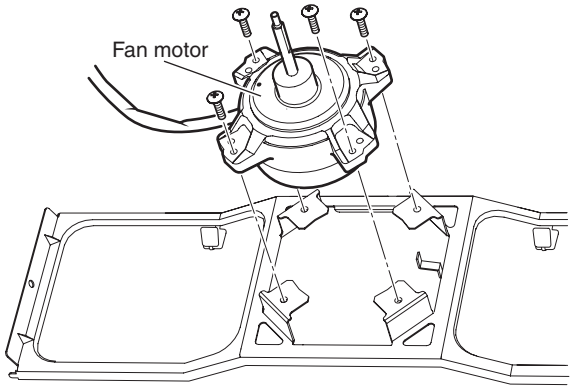
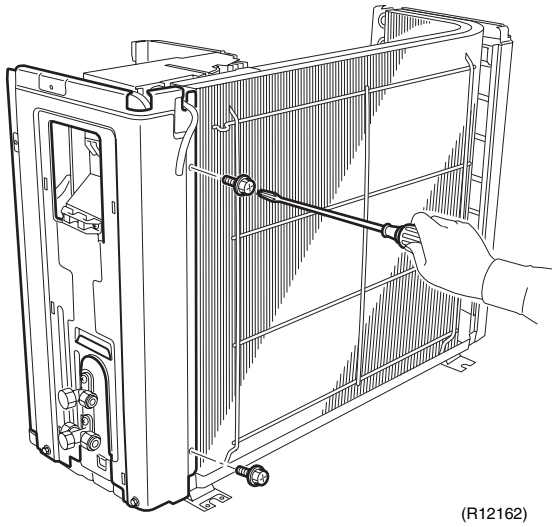
Step	Procedure		Points
2	Remove the 2 screws and lift the top panel.	 (R7190)	
3	Remove the drip proof plate.	 (R7191)	
4	Remove the 4 screws and remove the discharge grille.	 (R7192)  (R7193)	■ The discharge grille has 4 hooks.

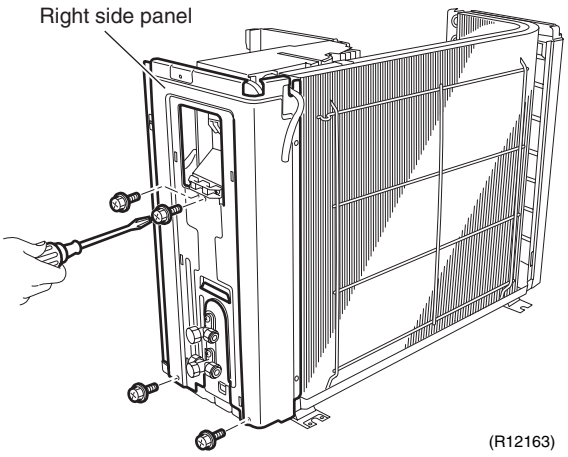
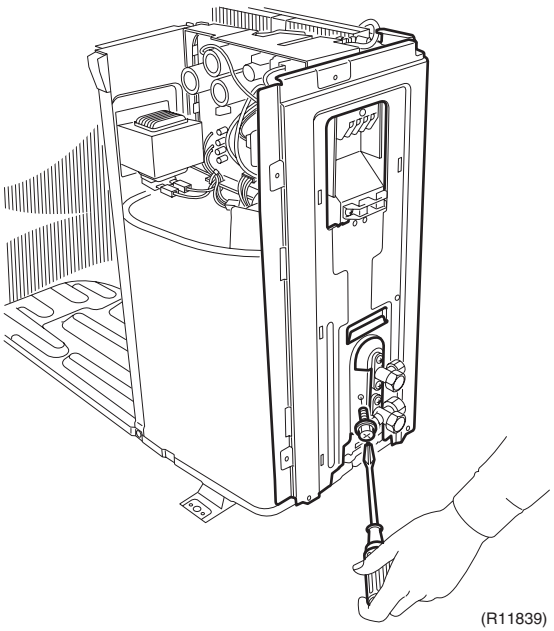
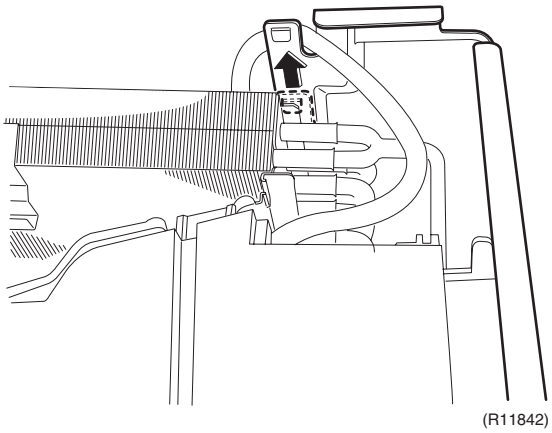
Step	Procedure		Points
5	Remove the 8 screws of the front panel.		
6	Unfasten the hooks. Pull and remove the front panel.		■ The front panel has 4 hooks.

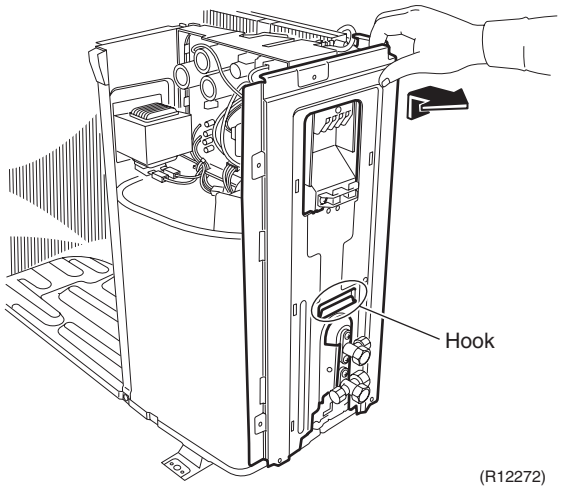
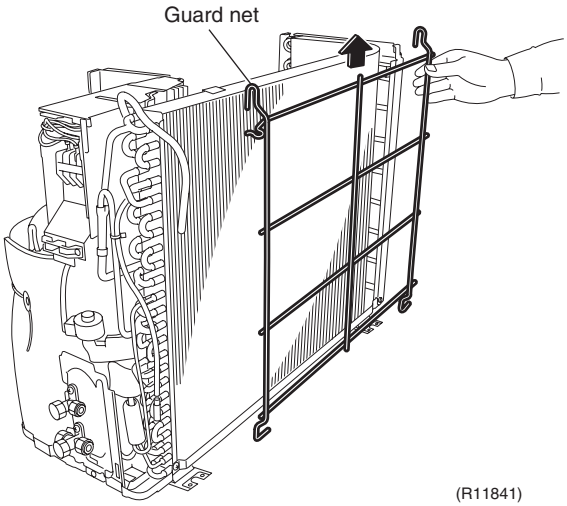
Step	Procedure	Points
3. Remove the fan motor.		■ Nut size: M6
1 Remove the nut of the outdoor fan.	 (R14205)	 (R12236)
2 Remove the outdoor fan.	 (R11828)	■ When reassembling, align ▼ mark of the outdoor fan with D-cut section of the motor shaft.
3 Release the outdoor temperature thermistor.	 (R11829)	

Step	Procedure		Points
4	Cut the clamp.	 (R11830)	
5	Disconnect the connector for the fan motor [S70].	 [S70] (R11831)	
6	Release the fan motor lead wire from the hook.	 (R11832)	

Step	Procedure		Points
7	Remove the screw and remove the fan motor fixing frame.	 (R11833)  (R12314)  (R7206)	■ When reassembling, fit the lower hooks into the bottom frame.

Step	Procedure		Points
8	Open the hooks and release the fan motor lead wire.	 (R11835)	■ When reassembling, put the fan motor lead wire through the back of the fan motor so as not to be entangled with the outdoor fan.  (R3249)
9	Remove the 4 screws and remove the fan motor.	 (R12311)	
4. Remove the right side panel.			
1	Remove the 2 screws on the rear side.	 (R12162)	

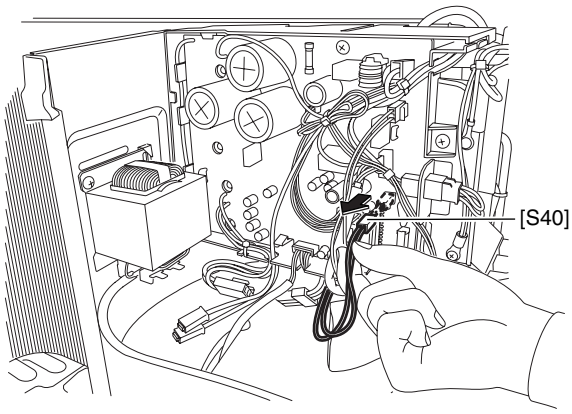
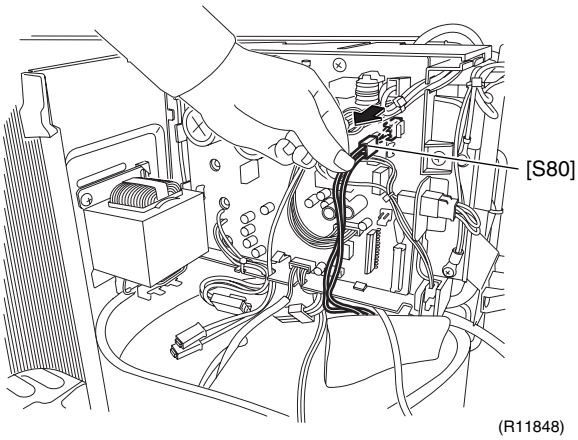
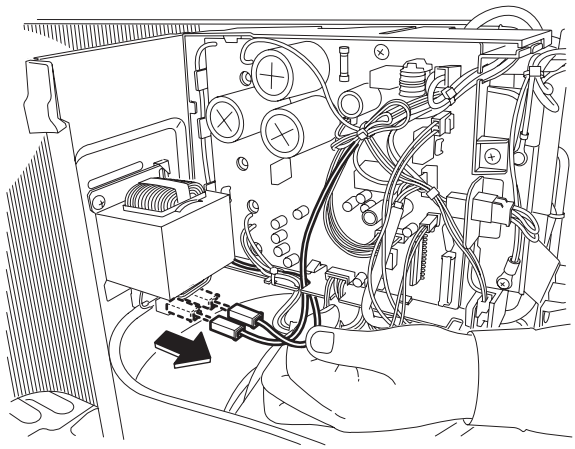
Step	Procedure		Points
2	Remove the 4 screws on the right side panel.	 (R12163)	
3	Remove the screw near the stop valves.	 (R11839)	
4	Unfasten the hook on the rear side.	 (R11842)	■ When reassembling, make sure to fit the hook.

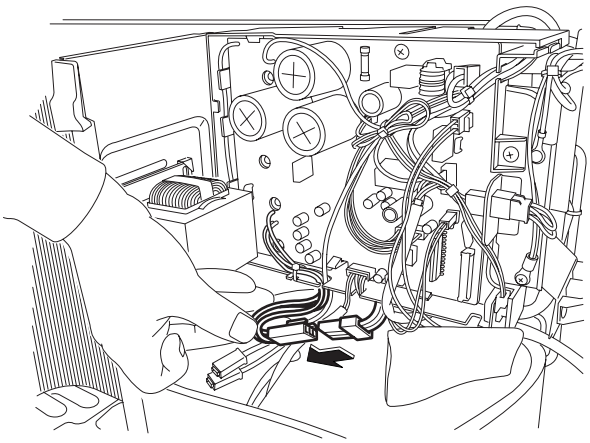
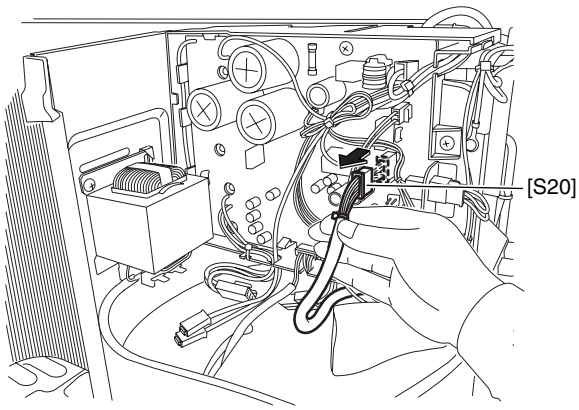
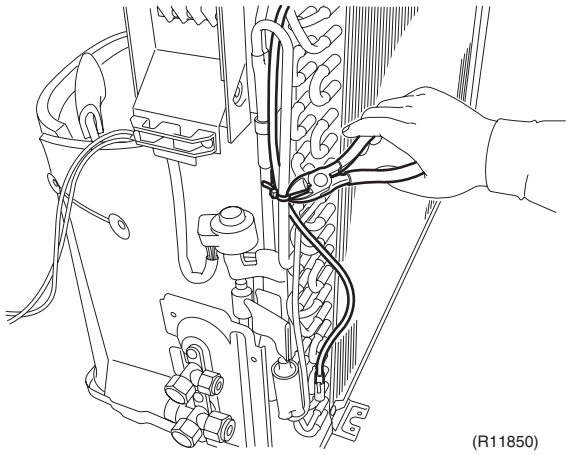
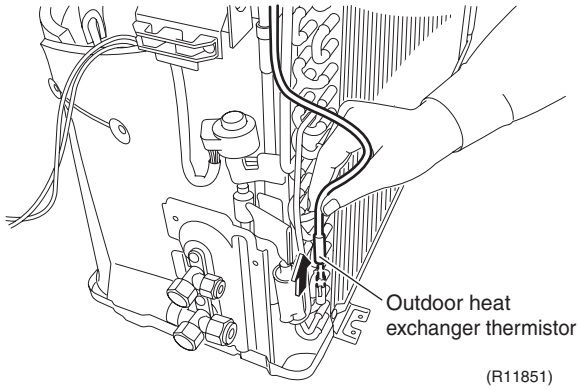
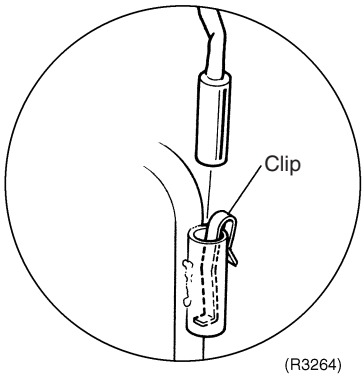
Step	Procedure		Points
5	Lift up the right side panel and remove it.	 (R12272)	■ When reassembling, make sure to fit the hook.
6	Lift up the guard net and remove it.	 (R11841)	

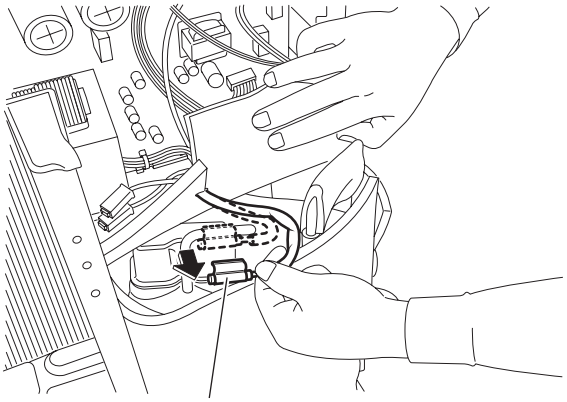
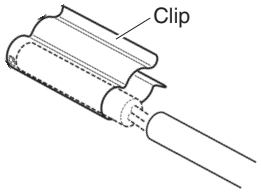
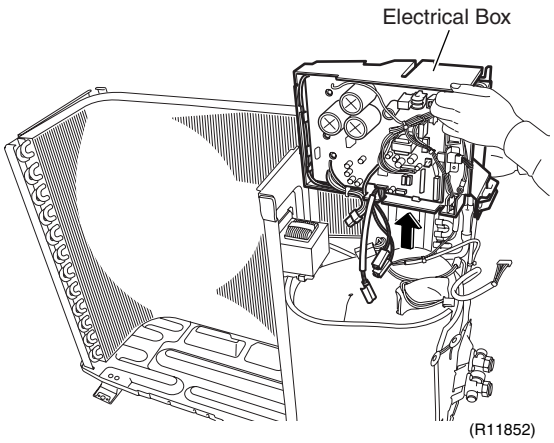
2.2 Removal of Electrical Box

Procedure

Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

Step	Procedure		Points
1	Disconnect the connector for the overload protector [S40].	 (R11846)	**Preparation** ■ Remove the panels and disconnect the connector for the fan motor according to the “Removal of Outer Panels / Fan Motor”.
2	Disconnect the connector for the four way valve coil [S80].	 (R11848)	
3	Disconnect the 2 connectors for the reactor.	 (R11844)	■ The colors of the harnesses (white or brown) do not matter to the position of the connector.

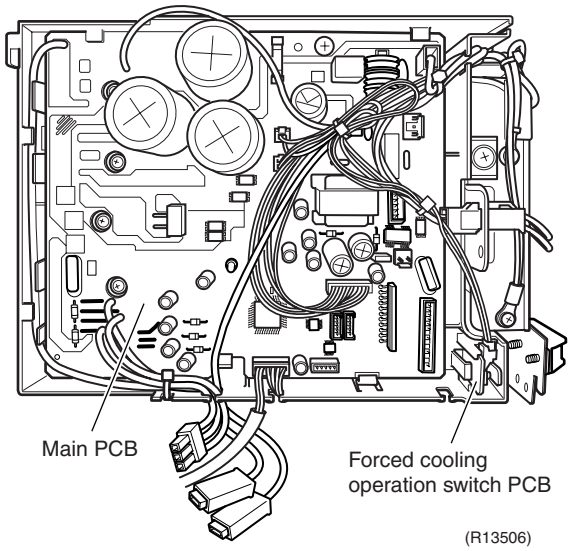
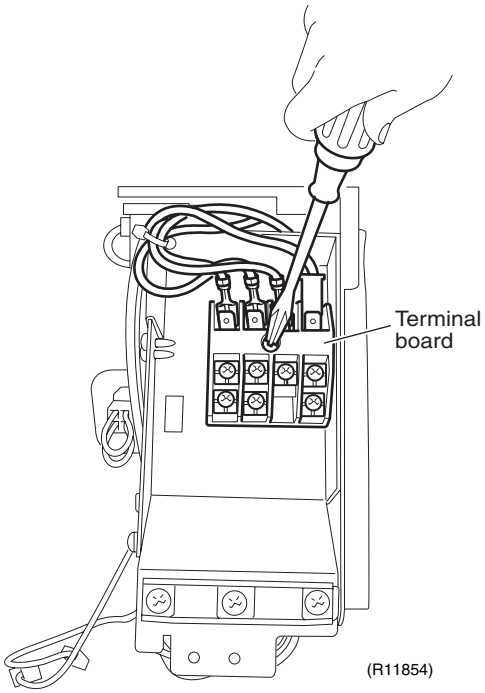
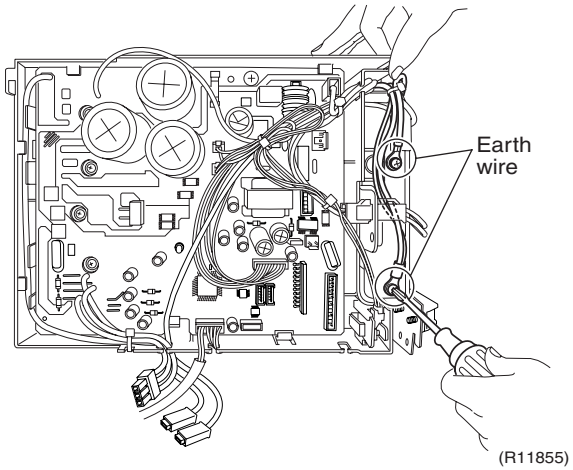
Step	Procedure		Points
4	Disconnect the relay connector for the compressor.	 (R11845)	
5	Disconnect the connector for the outdoor electronic expansion valve coil [S20].	 (R11847)	
6	Cut the clamp.	 (R11850)	
7	Pull out the outdoor heat exchanger thermistor.	 (R11851)	■ Be careful not to lose the clip for the thermistor.  (R3264)

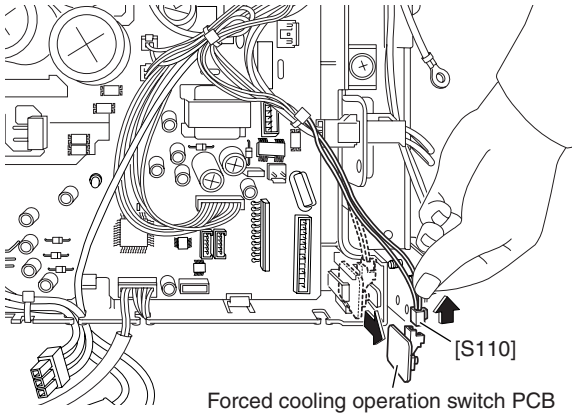
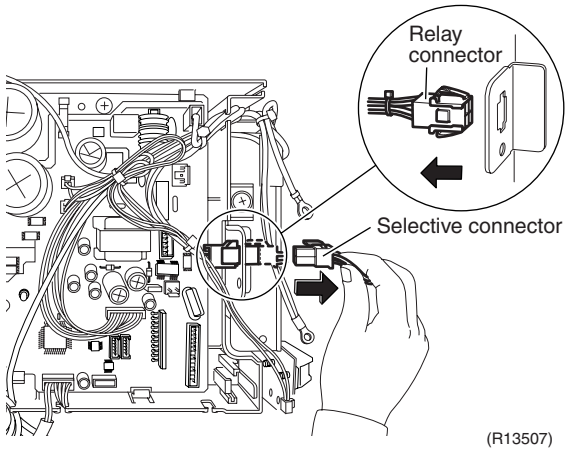
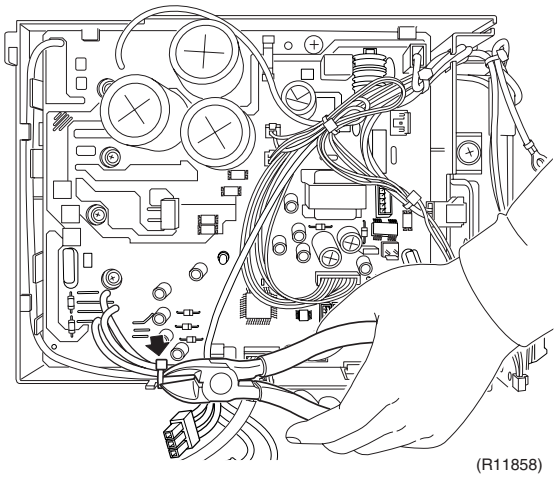
Step	Procedure		Points
8	Release the discharge pipe thermistor.	 (R11849)	■ Be careful not to lose the clip for the thermistor.  (R12279)
9	Lift and remove the electrical box.	 (R11852)	

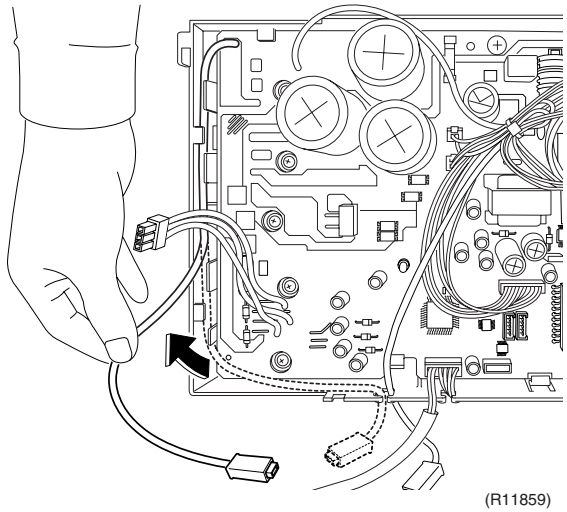
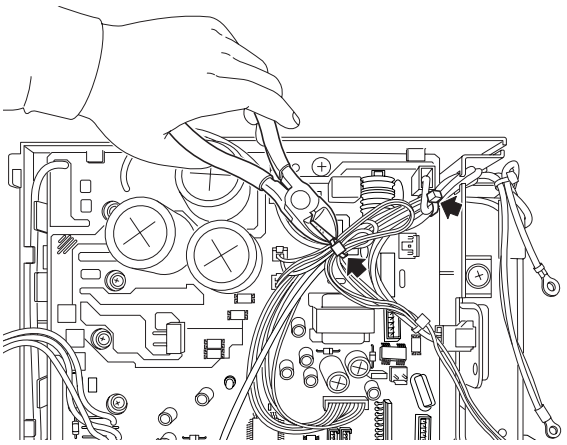
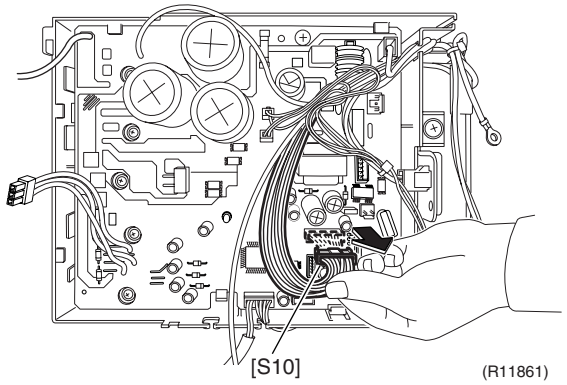
2.3 Removal of PCBs

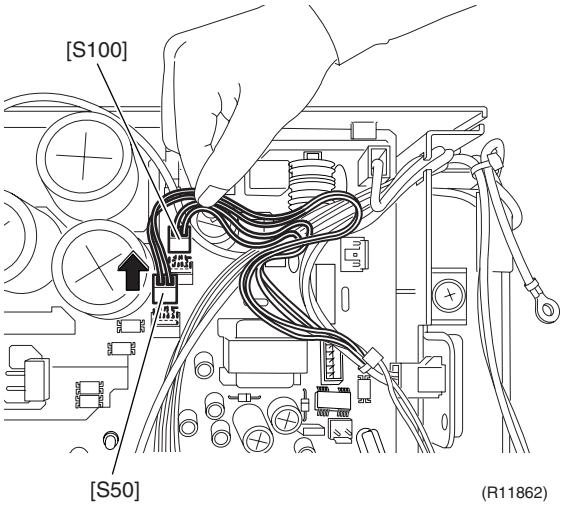
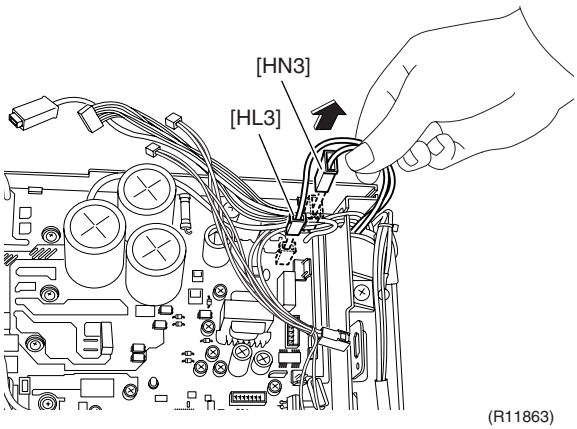
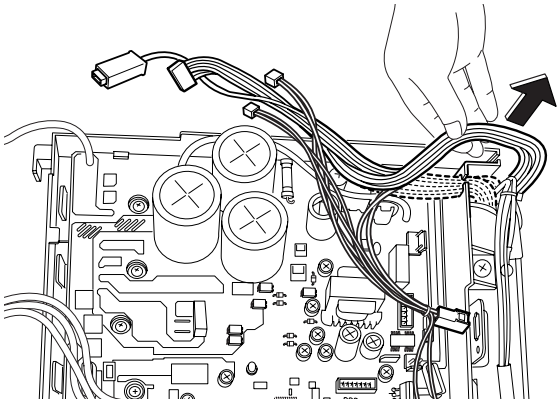
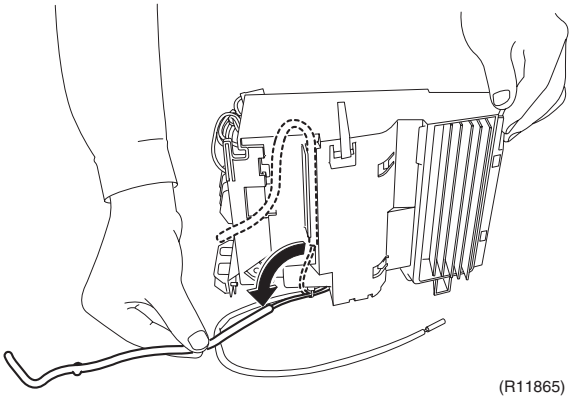
Procedure

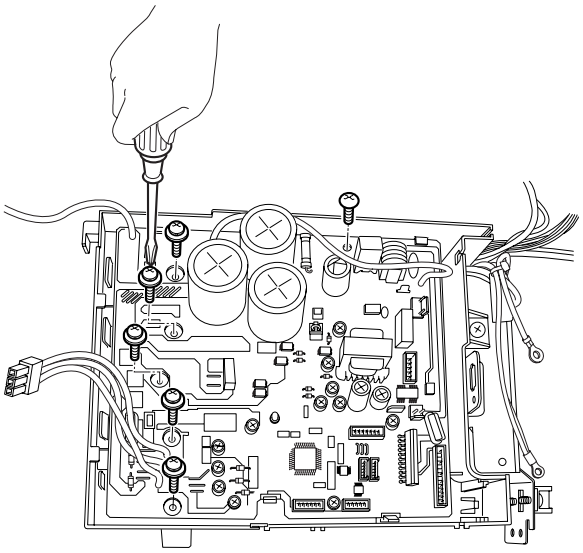
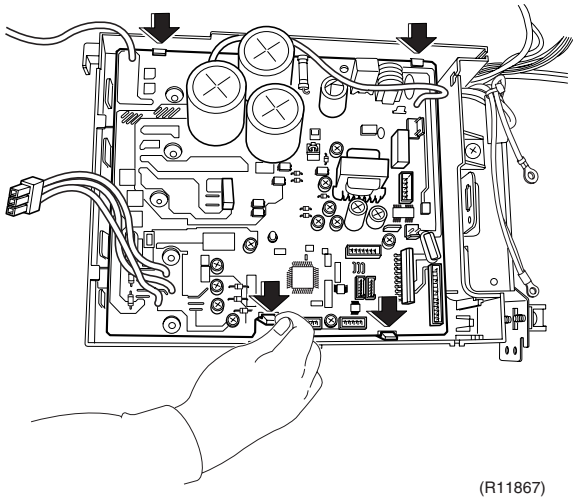
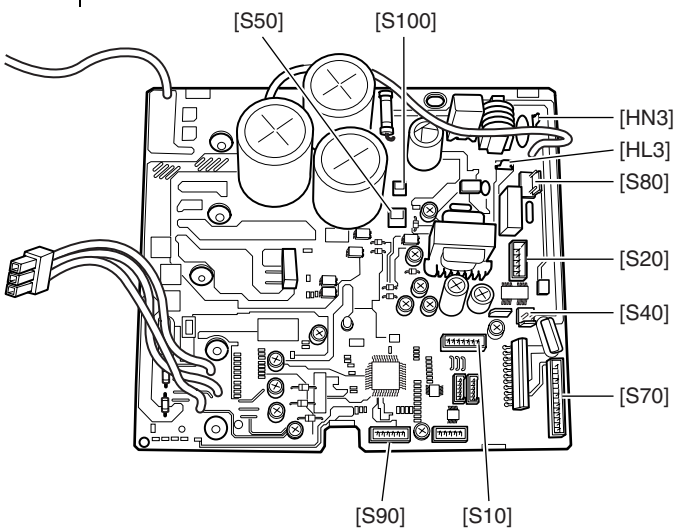
Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

Step	Procedure	Points
1. Remove the main PCB and the forced cooling operation switch PCB.		■ You can remove the main PCB when you disconnect the lead wires on the terminal board without removing the electrical box.
1 Feature of the main PCB		
2 Remove the screw on the terminal board.		
3 Release the 2 earth wires.		

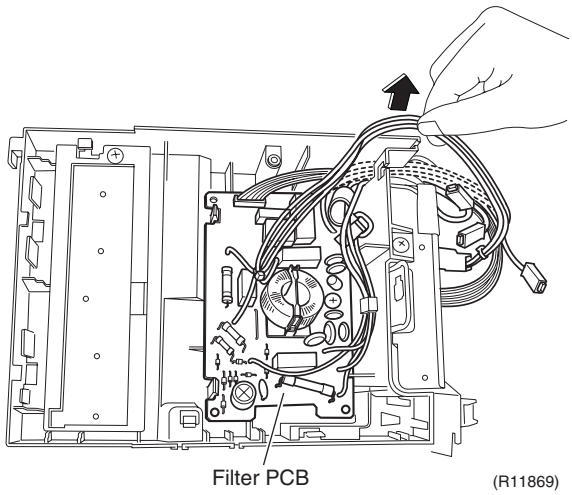
Step	Procedure		Points
4	Pull out the forced cooling operation switch PCB. Disconnect the connector [S110] to remove the forced cooling operation switch PCB.		■ Be careful of a sharp protrusion at the back of the forced cooling operation switch PCB.
5	Disconnect the selective connector for standby electricity saving and pull out the relay connector.		
6	Cut the clamp.		

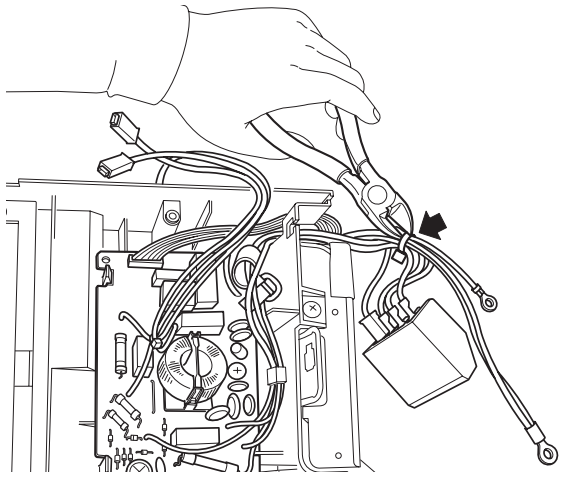
Step	Procedure		Points
7	Release the harness.	 (R11859)	
8	Cut the clamps at the 2 locations.	 (R11860)	
9	Disconnect the connector for the filter PCB [S10].	 [S10] (R11861)	

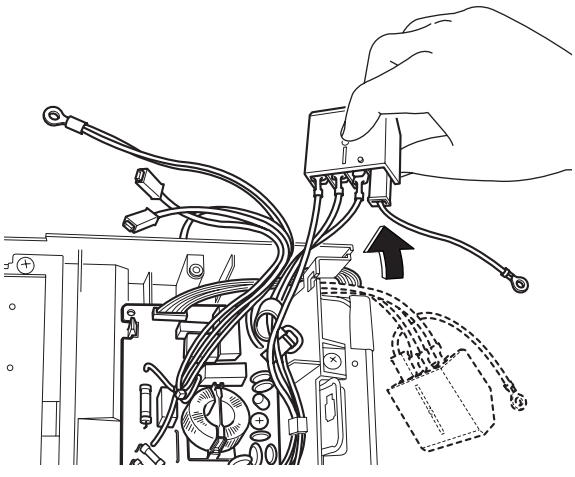
Step	Procedure		Points
10	Disconnect the connectors for the magnetic relay [S50] and for the forced operation button PCB [S100].	 (R11862)	
11	Disconnect the connector for the filter PCB [HL3] [HN3].	 (R11863)	
12	Release the harnesses from the hook.	 (R11864)	
13	Release the harness for the outdoor temperature thermistor.	 (R11865)	

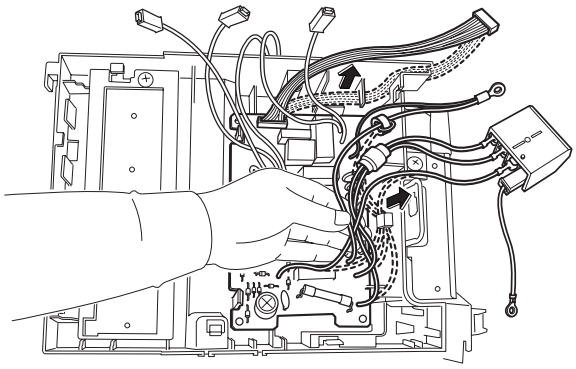
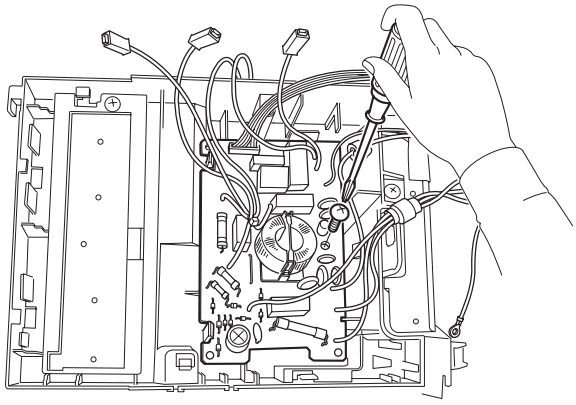
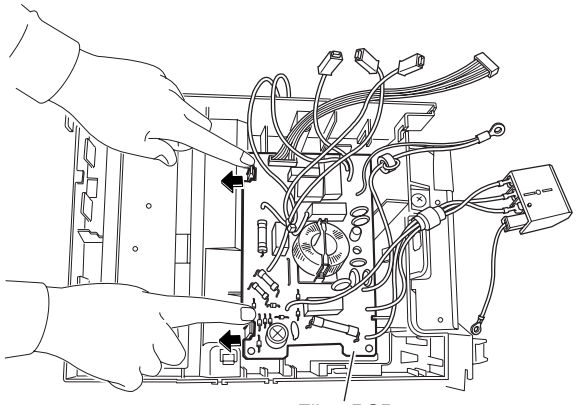
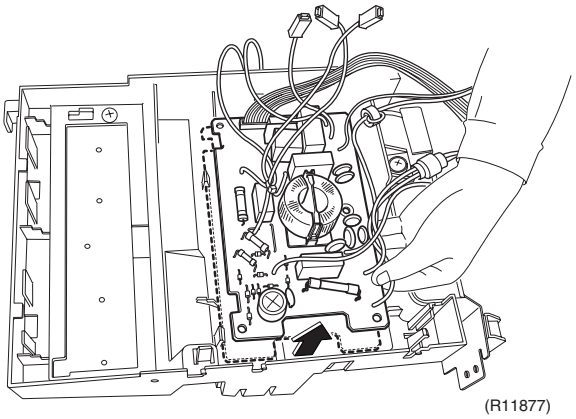
Step	Procedure	Points
14	Remove the 6 screws.  (R11866)	
15	Unfasten the 4 hooks and remove the main PCB.  (R11867)	■ Refer to page 11 for detail.
	 (R11868)	[S10] [HL3] [HN3]: filter PCB [S20]: outdoor electronic expansion valve coil [S40]: overload protector [S50]: magnetic relay [S70]: fan motor [S80]: four way valve coil [S90]: thermistors [S100]: forced cooling operation switch PCB

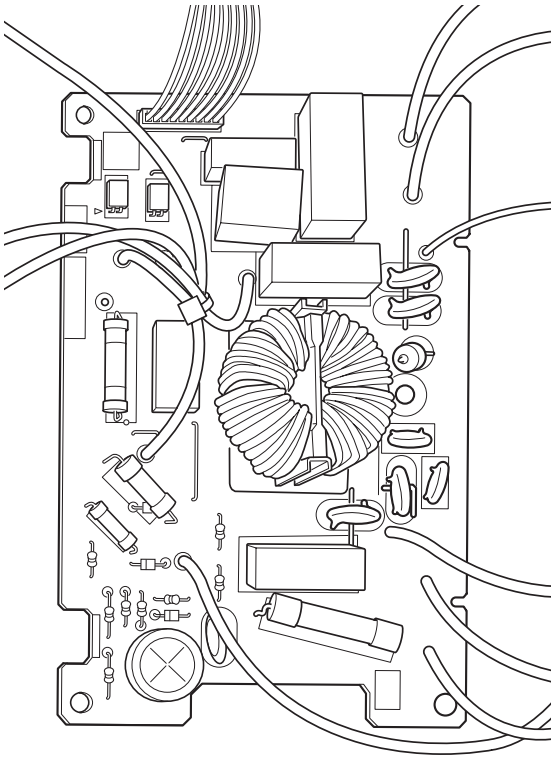
Step	Procedure	Points
2. Remove the filter PCB.		
1	Release the harnesses from the hook.	
2	Cut the clamp.	
3	Release the harnesses from the hook.	







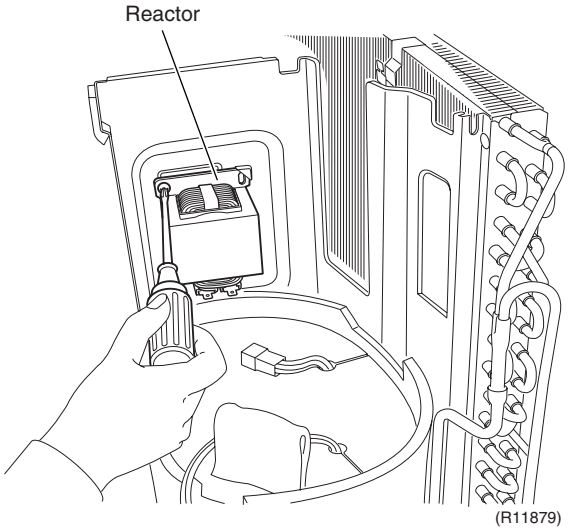
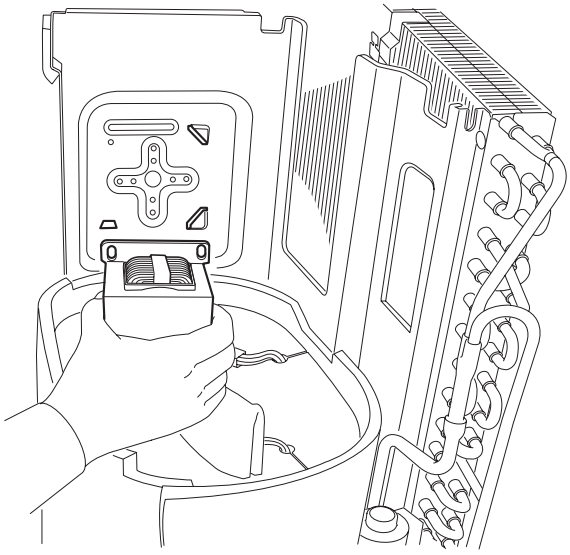
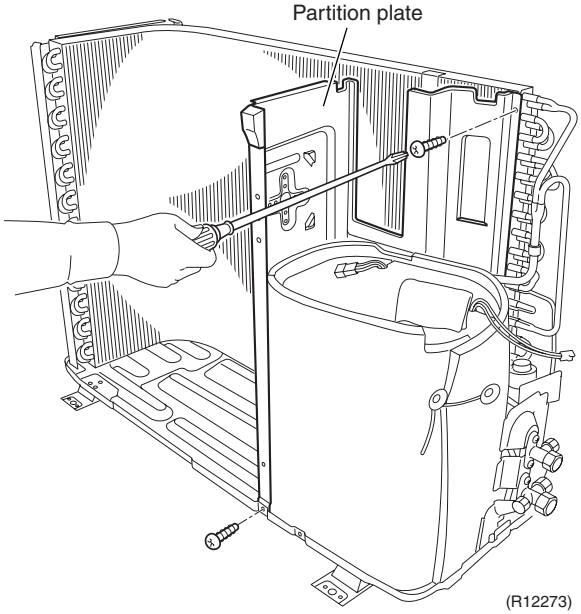
Step	Procedure		Points
4	Release the harnesses from the hooks.	 (R11873)	
5	Remove the screw.	 (R11874)	
6	Unfasten the 2 hooks.	 Filter PCB (R11876)	
7	Lift and pull out the filter PCB.	 (R11877)	

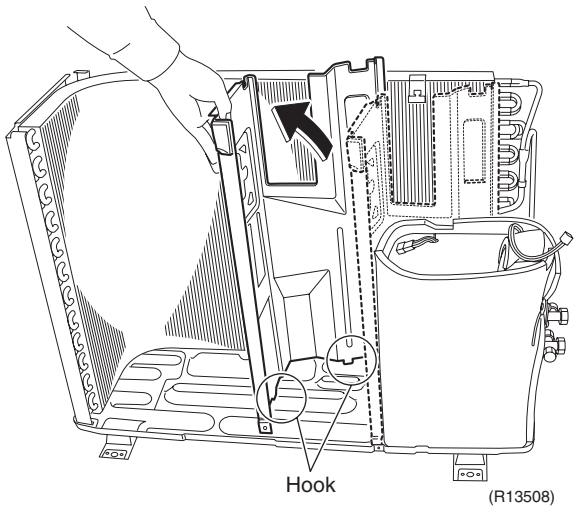
Step	Procedure		Points
8	Feature of the filter PCB	 (R11878)	■ Refer to page 11 for detail.

2.4 Removal of Reactor / Partition Plate

Procedure

Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

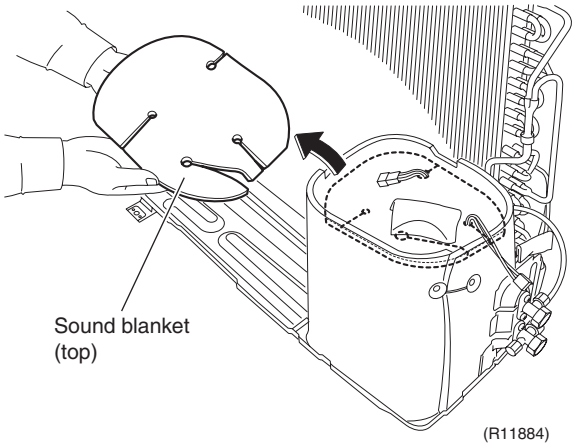
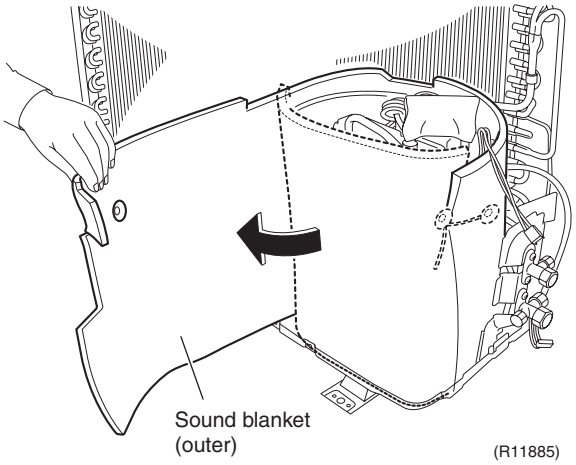
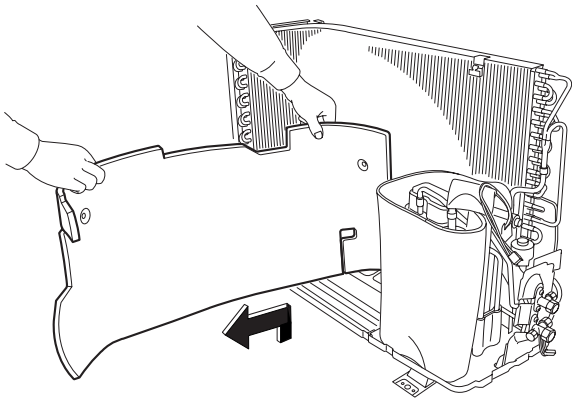
Step	Procedure	Points
1. Remove the reactor.	 (R11879)  (R11880)	**Preparation** ■ Remove the outer panels according to the “Removal of Outer Panels / Fan Motor”. ■ Remove the electrical box according to the “Removal of Electrical Box”.
1 Remove the screw and remove the reactor.		
2. Remove the partition plate.	 (R12273)	
1 Remove the 2 screws.		

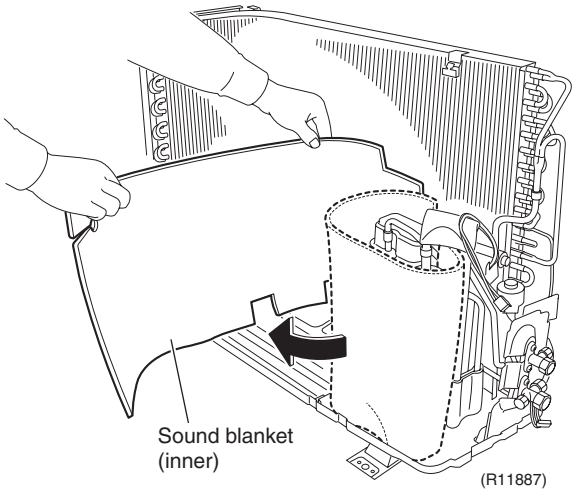
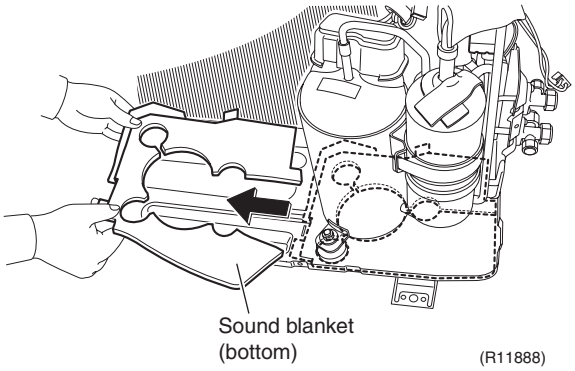
Step	Procedure		Points
2	The partition plate has 2 hooks on the lower side. Lift and pull the partition plate to remove.	 (R13508)	■ When reassembling, fit the lower hooks into the bottom frame.

2.5 Removal of Sound Blankets

Procedure

Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

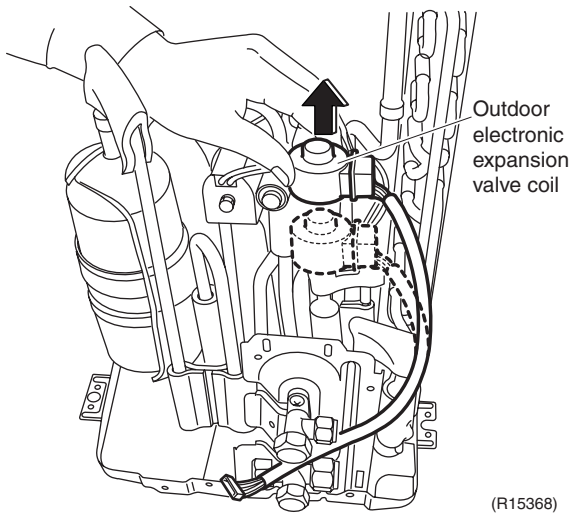
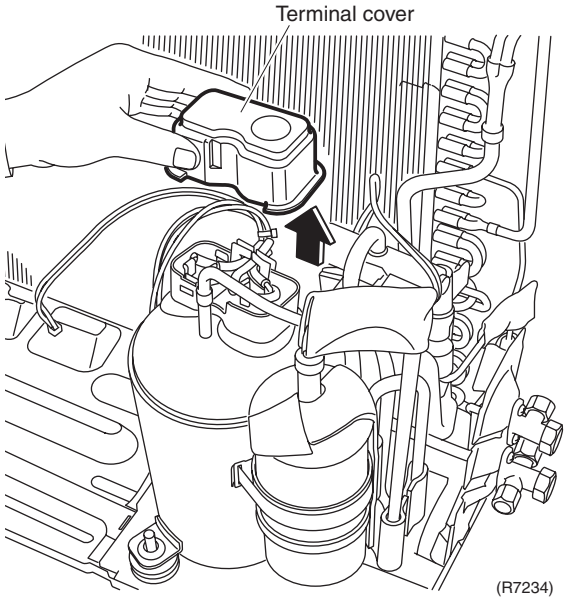
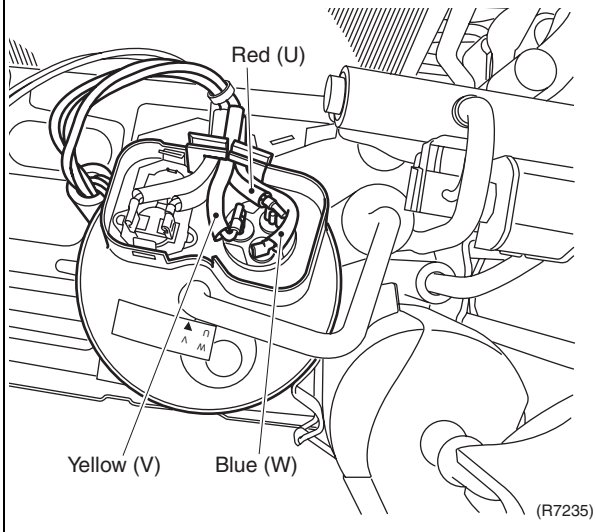
Step	Procedure		Points
1	Remove the sound blanket (top).	 (R11884)	■ Since the piping ports are torn easily, remove the sound blanket carefully.
2	Untie the string and open the sound blanket (outer).	 (R11885)	
3	Lift and remove the sound blanket (outer).	 (R11886)	

Step	Procedure		Points
4	Pull the sound blanket (inner) out.		
5	Pull the sound blanket (bottom) out.		

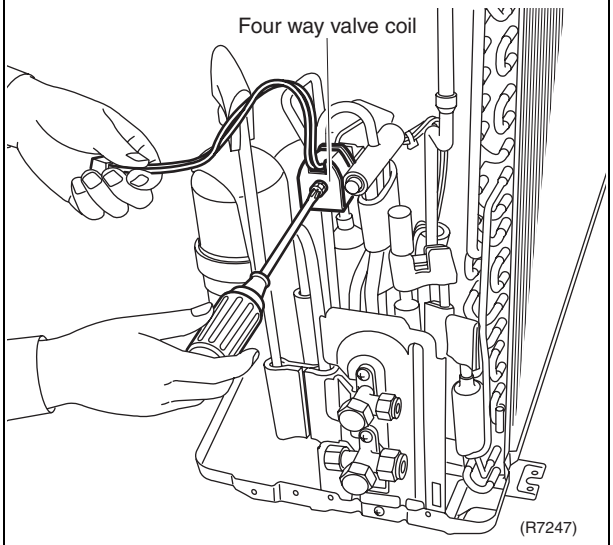
2.6 Removal of Four Way Valve

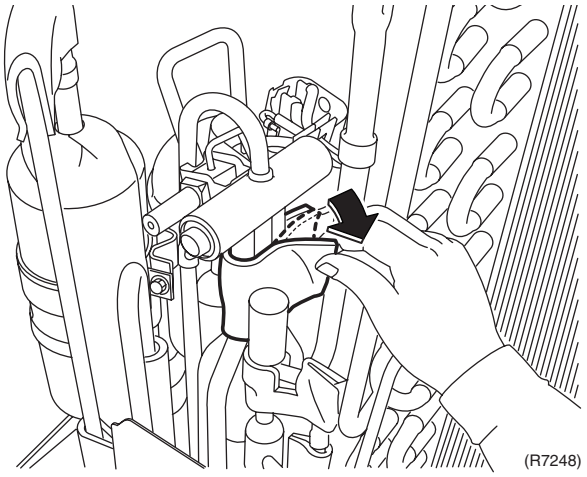
Procedure

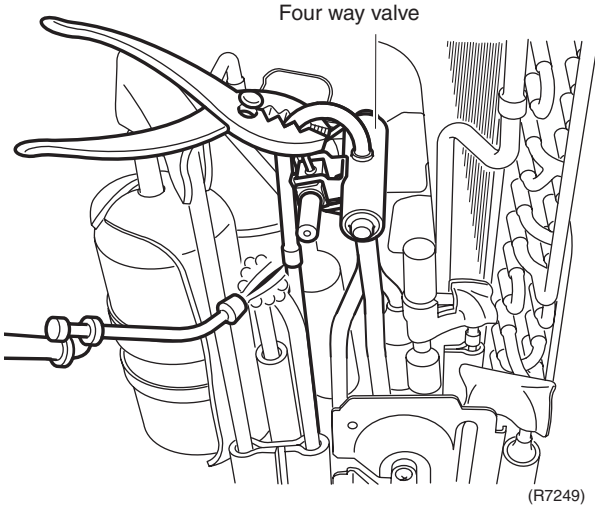
Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

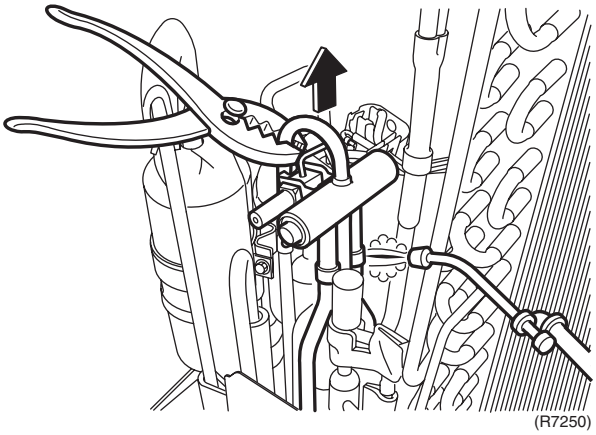
Step	Procedure		Points
1	Pull out the outdoor electronic expansion valve coil.		
2	Remove the terminal cover.		
3	Disconnect the lead wires of the compressor.		

Step	Procedure	Points
4	Remove the screw and remove the four way valve coil.	**Warning** **Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas brazing machine.** **Warning** **If the refrigerant gas leaks during work, ventilate the room. (If the refrigerant gas is exposed to flames, toxic gas may be generated.)** **Caution** **From the viewpoint of global environment protection, do not discharge the refrigerant gas in the atmosphere. Make sure to collect all the refrigerant gas.** **Cautions for restoration** 1. Restore the piping by non-oxidation brazing. 2. It is required to prevent the carbonization of the oil inside the four way valve and the deterioration of the gaskets affected by heat. (Keep below 120°C.) For the sake of this, wrap the four way valve with wet cloth and provide water so that the cloth does not dry. **In case of difficulty with gas brazing machine** 1. Disconnect the brazed part where is easy to disconnect and restore. 2. Cut pipes on the main unit with a tube cutter in order to make it easy to disconnect.
5	Remove the sheets of putty.	
	■ Before working, make sure that the refrigerant gas is empty in the circuit. ■ Be sure to apply nitrogen replacement when heating up the brazed part.	
6	Heat up the brazed part and withdraw the piping with pliers.	





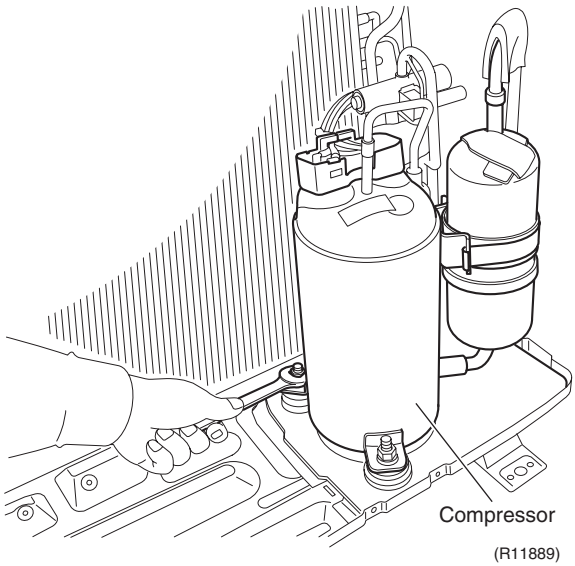
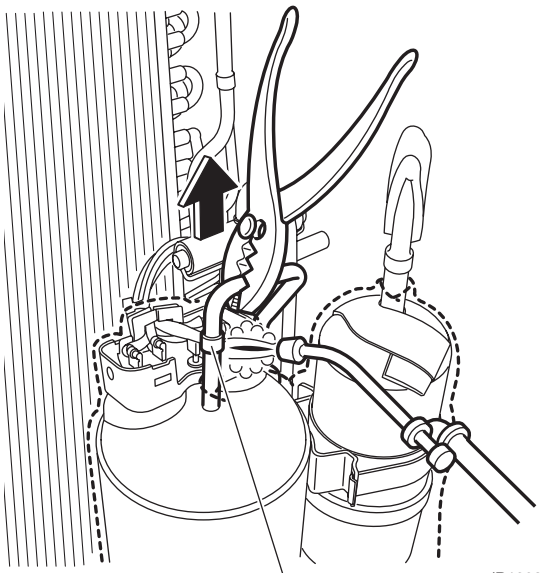


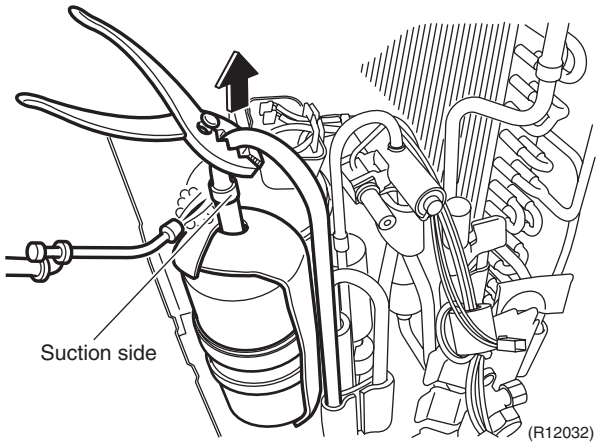
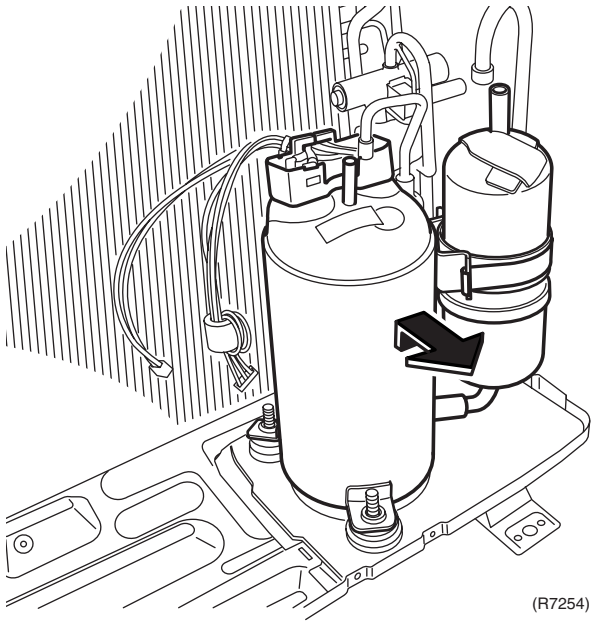
Step	Procedure		Points
		 (R7250)	**Note:** ■ Do not use a metal saw for cutting pipes by all means because the sawdust comes into the circuit. ■ When withdrawing the pipes, be careful not to pinch them firmly with pliers. The pipes may get deformed. ■ Provide a protective sheet or a steel plate so that the brazing flame cannot influence peripheries.

2.7 Removal of Compressor

Procedure

Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

Step	Procedure		Points
1	Remove the 2 nuts of the compressor.	 (R11889)	**Warning** **Be careful not to get yourself burnt with pipes and other parts that are heated by the gas brazing machine.** **Warning** **If the refrigerant gas leaks during work, ventilate the room. (If the refrigerant gas is exposed to flames, toxic gas may be generated.)** **Warning** **Since it may happen that the refrigerant oil in the compressor catches fire, prepare wet cloth so as to extinguish fire immediately.** **Caution** **From the viewpoint of global environment protection, do not discharge the refrigerant gas in the atmosphere. Make sure to collect all the refrigerant gas.** **Cautions for restoration** 1. Restore the piping by non-oxidation brazing. 2. It is required to prevent the carbonization of the oil inside the four way valve and the deterioration of the gaskets affected by heat. (Keep below 120°C.) For the sake of this, wrap the four way valve with wet cloth and provide water so that the cloth does not dry. **In case of difficulty with gas brazing machine** 1. Disconnect the brazed part where is easy to disconnect and restore. 2. Cut pipes on the main unit with a tube cutter in order to make it easy to disconnect.
■ Before working, make sure that the refrigerant gas is empty in the circuit. ■ Be sure to apply nitrogen replacement when heating up the brazed part.		 (R12031)	
2	Heat up the brazed part of the discharge side and disconnect.		

Step	Procedure		Points
3	Heat up the brazed part of the suction side and disconnect.		**Note:** ■ Do not use a metal saw for cutting pipes by all means because the sawdust comes into the circuit. ■ When withdrawing the pipes, be careful not to pinch them firmly with pliers. The pipes may get deformed. ■ Provide a protective sheet or a steel plate so that the brazing flame cannot influence peripheries. ■ Be careful so as not to burn the compressor terminals, the name plate, the heat exchanger fins.
4	Lift the compressor up and remove it.		

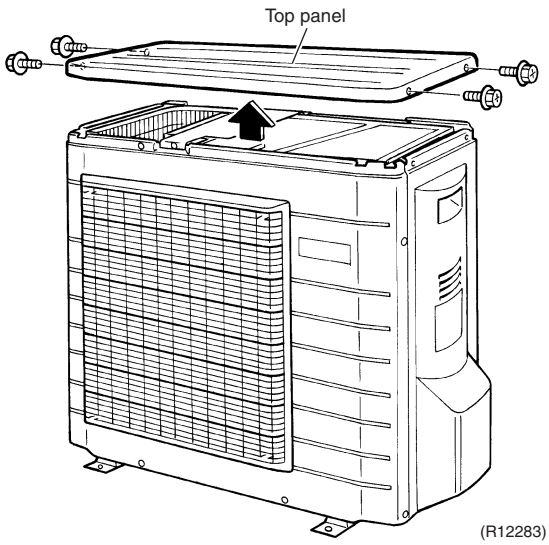
3. Outdoor Unit - RXG50K2V1B

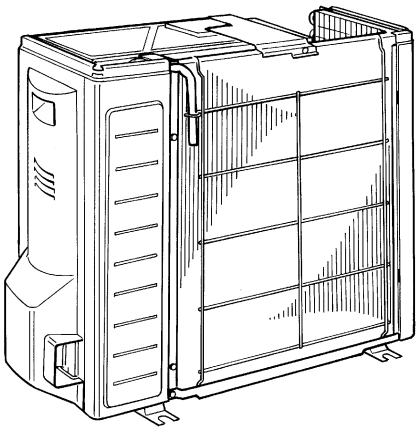
3.1 Removal of Outer Panels

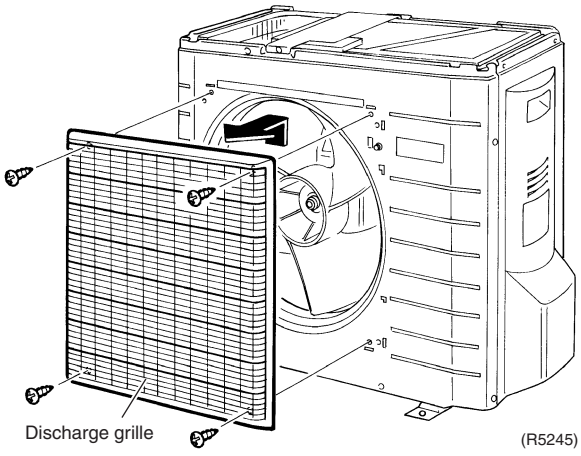
Procedure

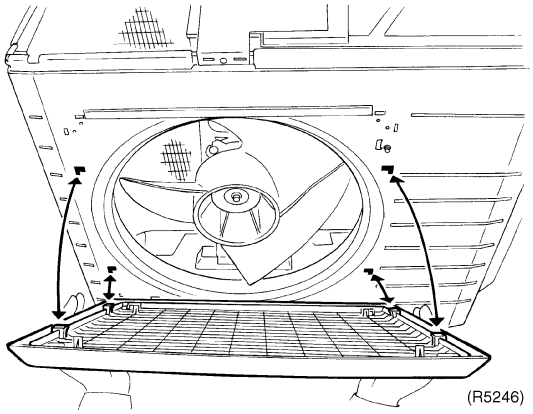
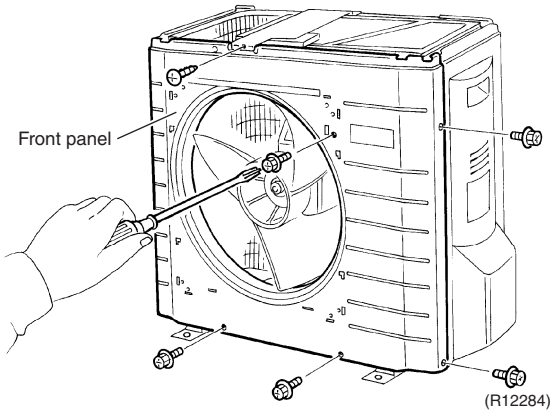
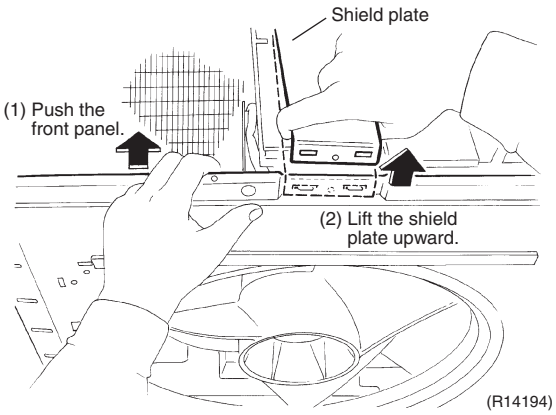
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

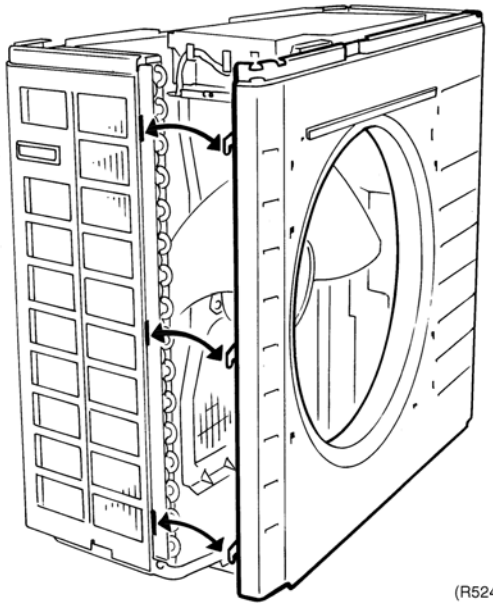
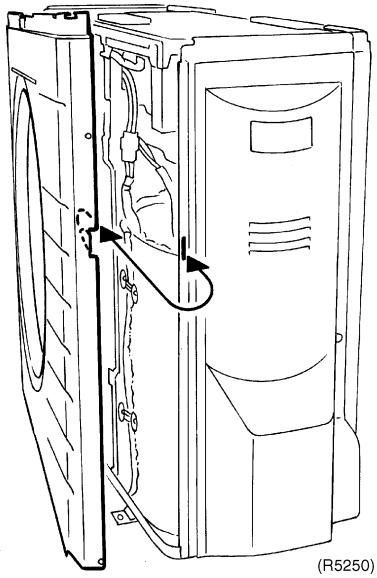
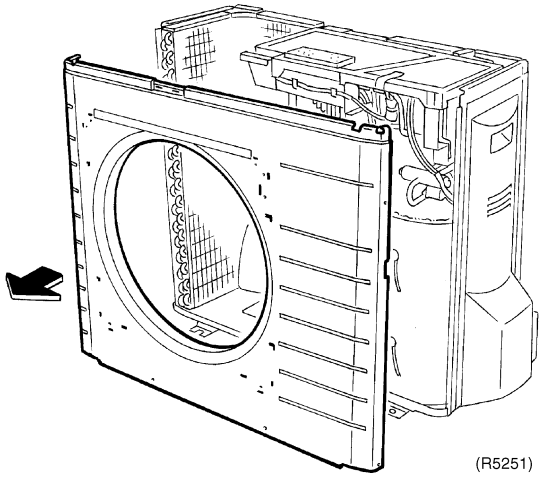
Step	Procedure	Points
1. Remove the panels.		
1	Remove the 4 screws and lift the top panel.	
2	Remove the 4 screws and remove the discharge grille.	■ Take care not to cut your finger by the fins of the outdoor heat exchanger. ■ Slide the discharge grille upward and remove it.

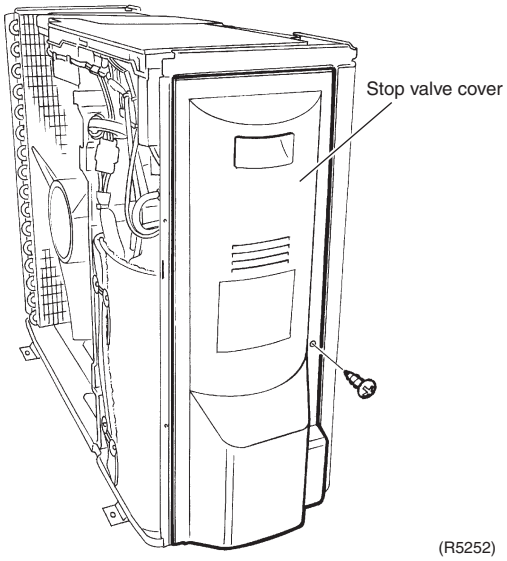
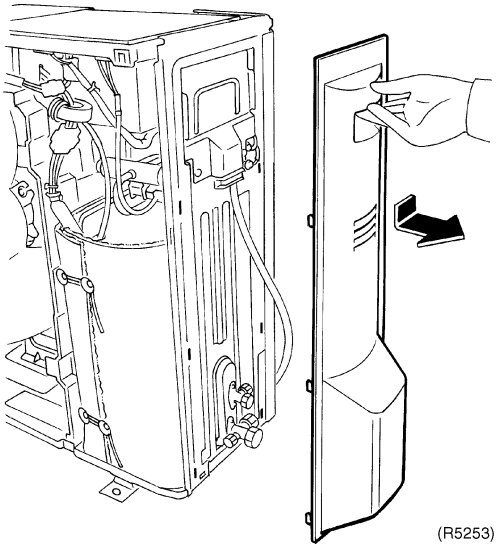
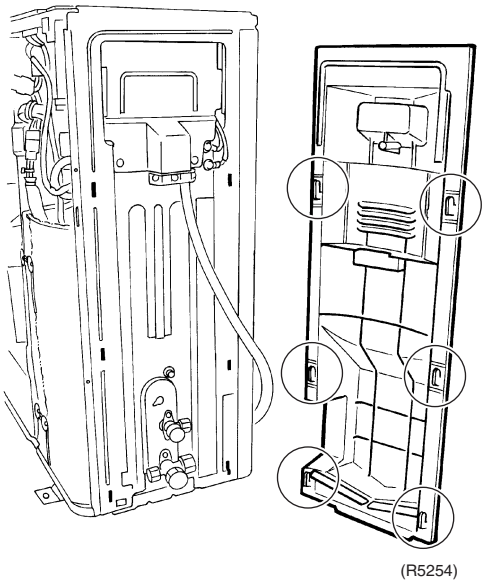






Step	Procedure		Points
		 (R5246)	■ The discharge grille has 4 hooks.
3	Remove the 6 screws of the front panel.	 (R12284)	
4	Push the front panel and lift the shield plate to unfasten the hooks.	 (R14194)	

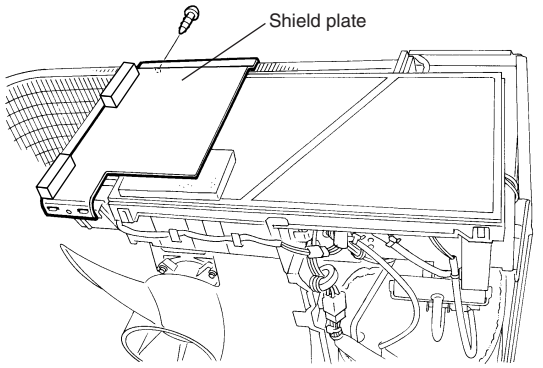
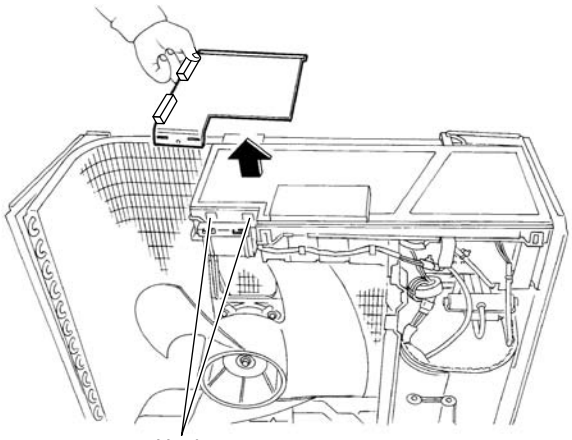
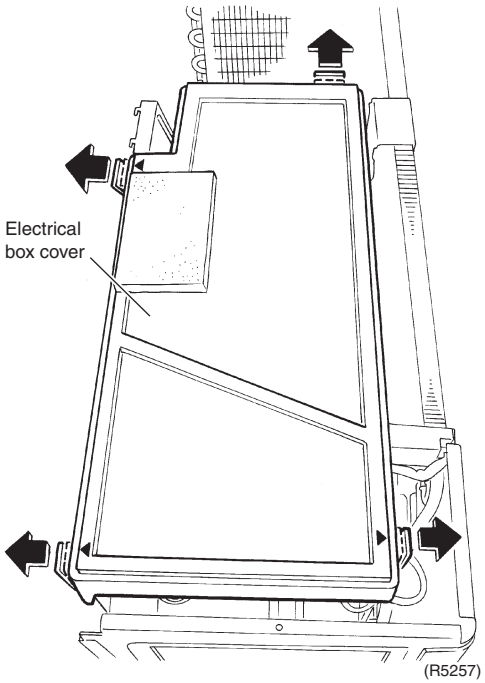
Step	Procedure		Points
5	Unfasten the left side hooks, and then the right side hook. Remove the front panel.	 (R5249)	■ Lift the front panel while pushing the left side panel inward.
		 (R5250)	■ Lift the front panel and unfasten the right side hook.
		 (R5251)	■ When reassembling, fit the right side of the front panel first.

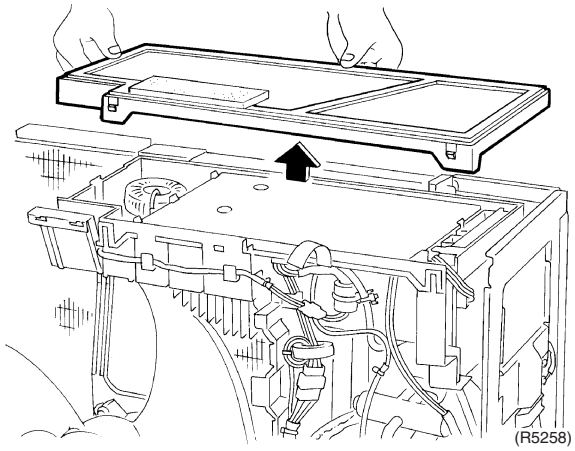
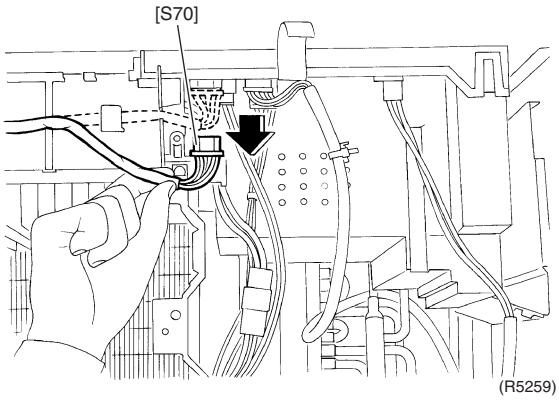
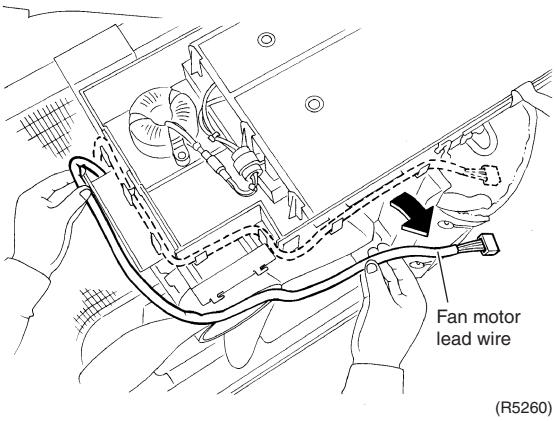
Step	Procedure	Points
2. Remove the stop valve cover.		
1 Remove the screw of the stop valve cover.	 (R5252)	
2 Pull down the stop valve cover to unfasten the hooks and remove it.	 (R5253)  (R5254)	■ The stop valve cover has 6 hooks.

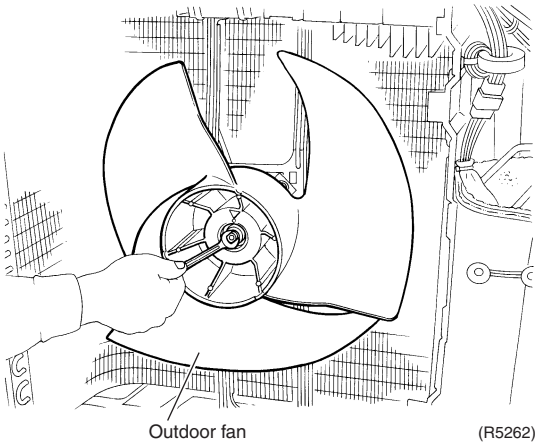
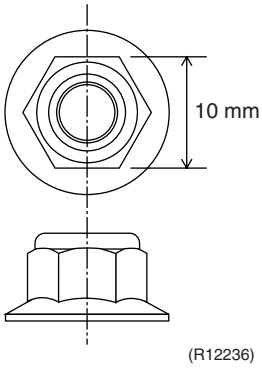
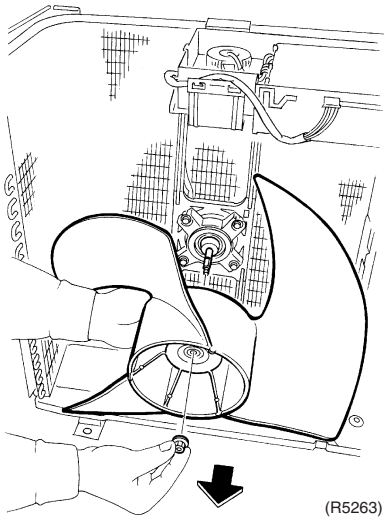
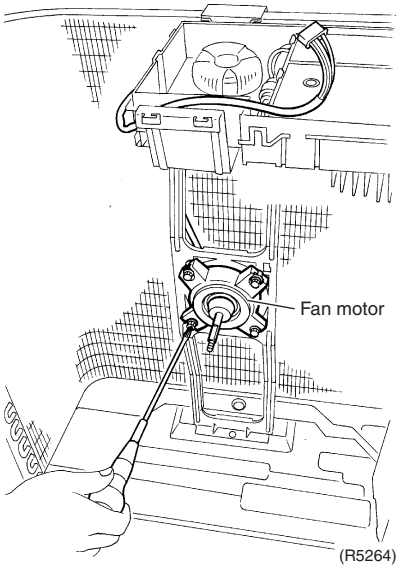
3.2 Removal of Outdoor Fan / Fan Motor

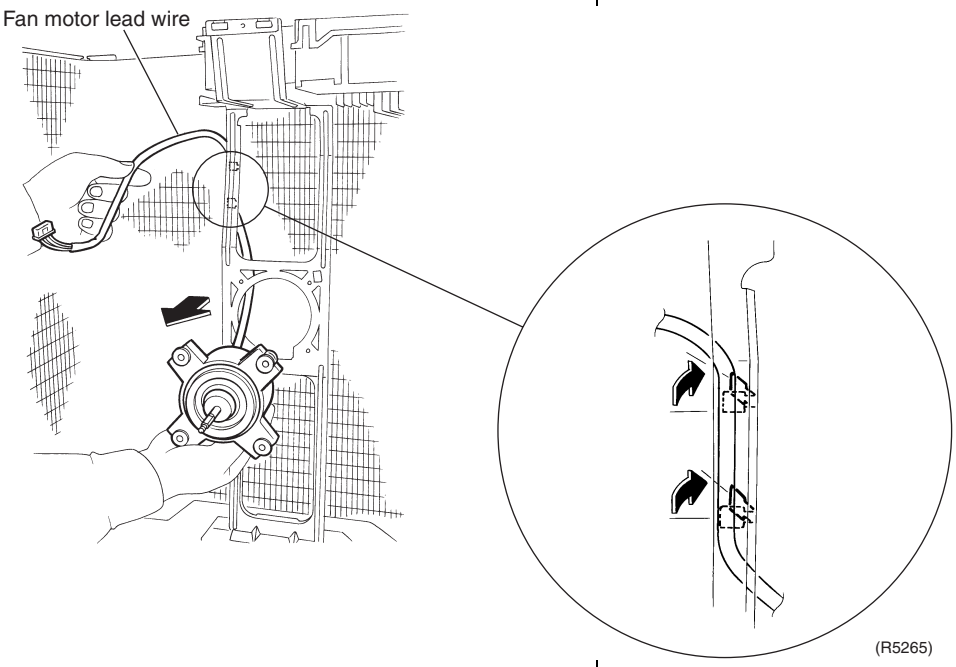
Procedure

Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1.	Remove the electrical box cover.		**Preparation** ■ Remove the top panel and the front panel according to the “Removal of Outer Panels”. ■ This procedure is not necessary to remove the outdoor fan only.
1	Remove the screw of the shield plate.		
2	Unfasten the 2 hooks and remove the shield plate.		
3	Unfasten the 4 hooks of the electrical box cover and remove it.		

Step	Procedure		Points
		 (R5258)	
2. Remove the fan motor.			
1	Disconnect the connector for the fan motor [S70].	 (R5259)	
2	Release the fan motor lead wire from the 7 hooks.	 (R5260)	

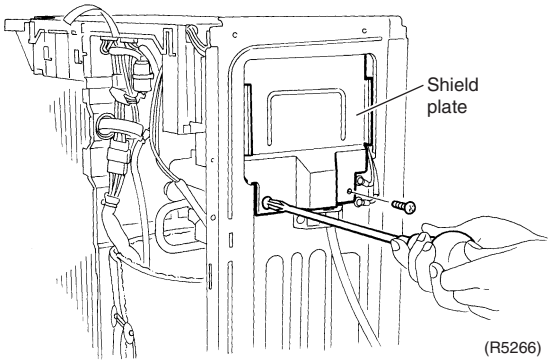
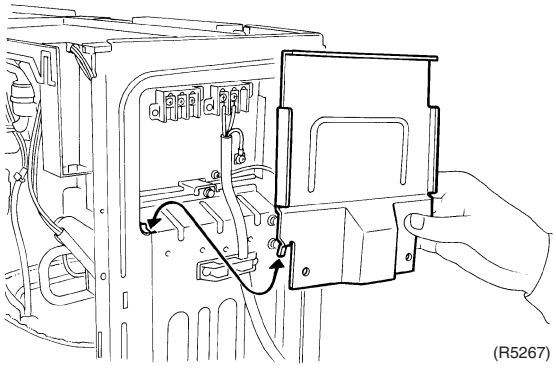
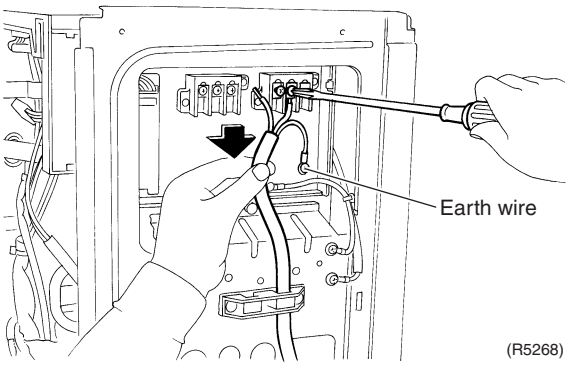
Step	Procedure		Points
3	Remove the nut of the outdoor fan.		■ Nut size: M6 
			■ When reassembling, align ▼ mark of the outdoor fan with D-cut section of the motor shaft.
4 5	Remove the lower 2 screws from the fan motor first. Then, remove the 2 upper screws.		■ Be sure to remove the lower screws first. If the upper screws are removed first, the fan motor, the center of gravity of which is toward the front, may tilt down or fall, getting you injured.

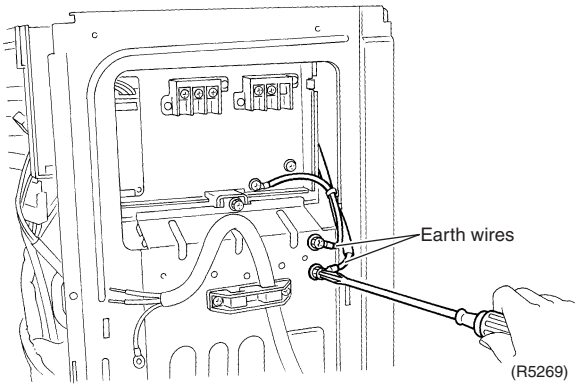
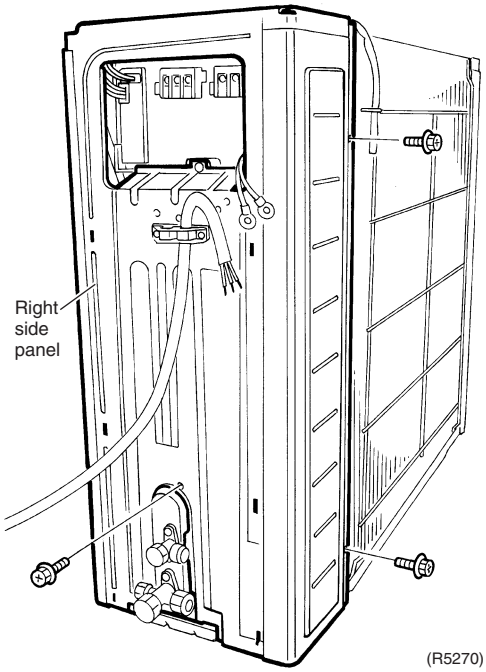
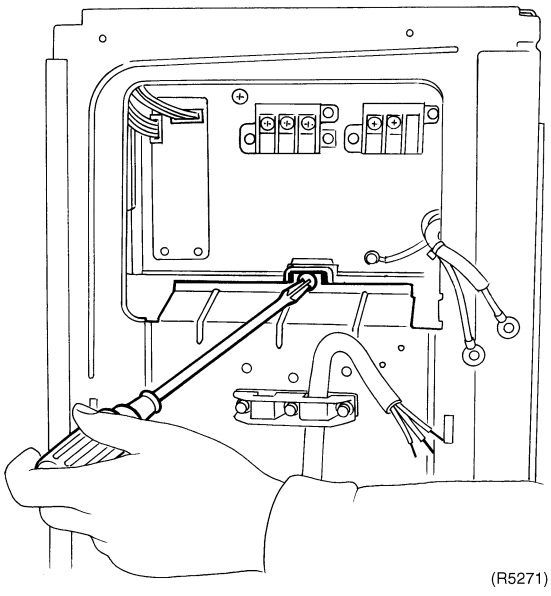
Step	Procedure		Points
6	Release the fan motor lead wire from the 2 hooks and pull the fan motor out.		■ When reassembling, put the fan motor lead wire through the back of the fan motor so as not to be entangled with the outdoor fan.

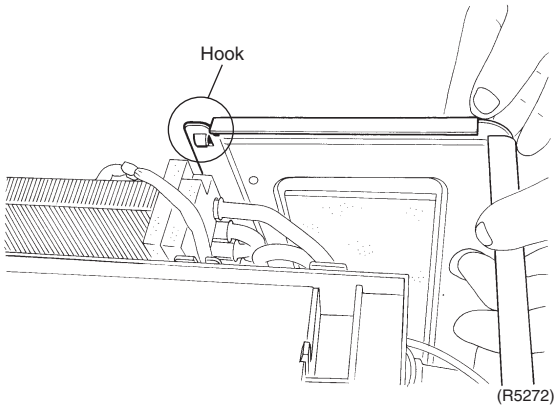
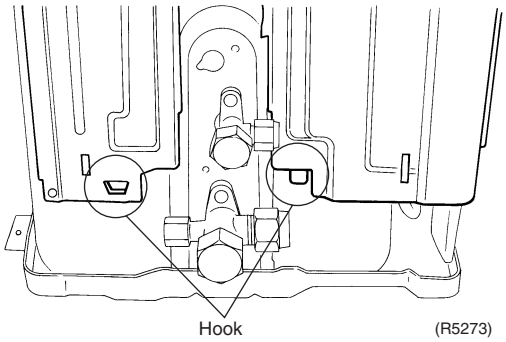
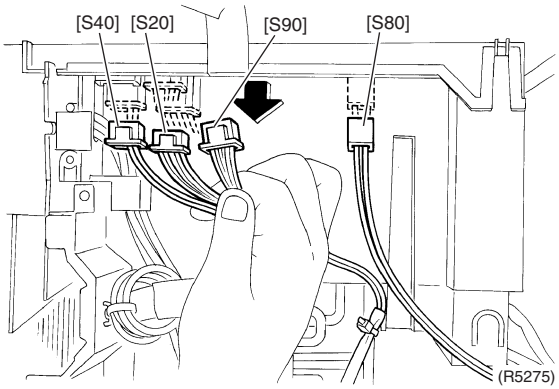
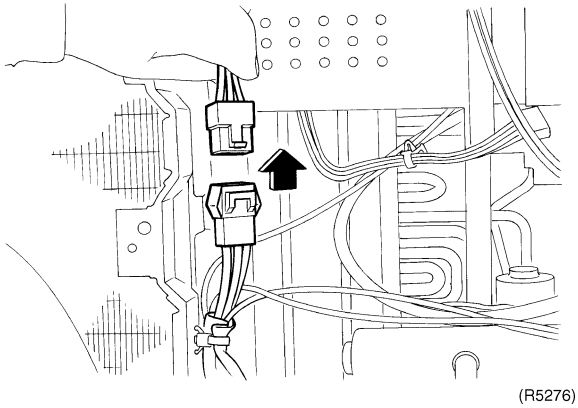
3.3 Removal of Electrical Box

Procedure

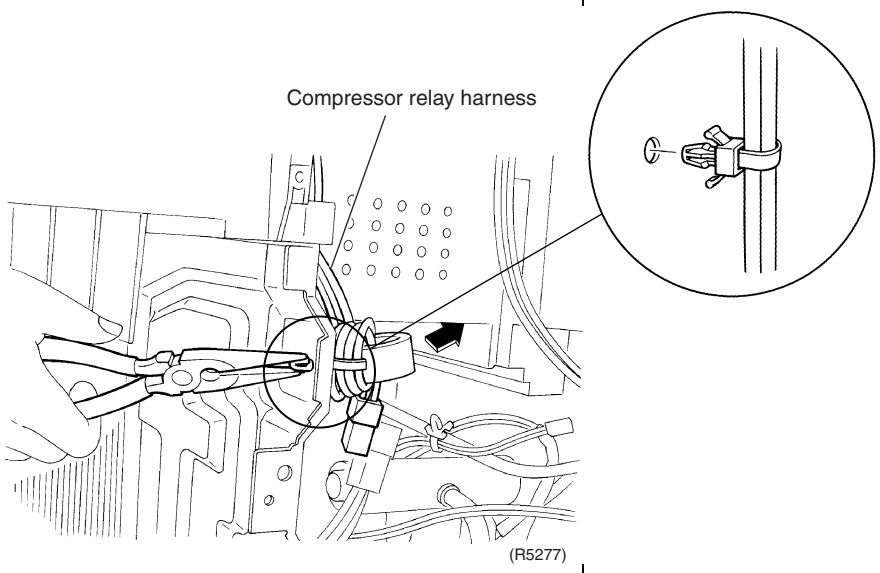
Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

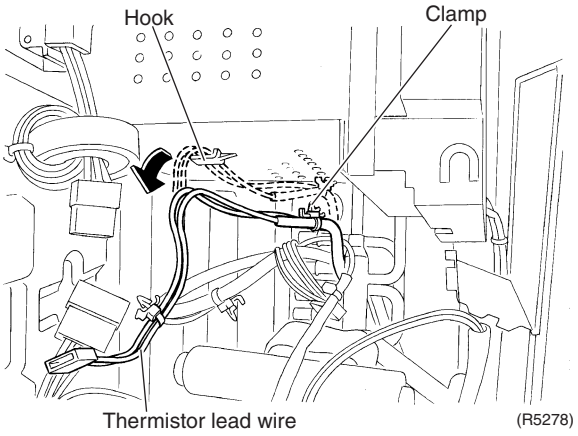
Step	Procedure		Points
1	Remove the 2 screws of the shield plate.		**Preparation** ■ Remove the top panel and the front panel according to the “Removal of Outer Panels”.
2	Slide the shield plate upward to unfasten the hook on the bottom left, and then remove the shield plate.		
3	Disconnect the 2 power supply cables and the earth wire.		

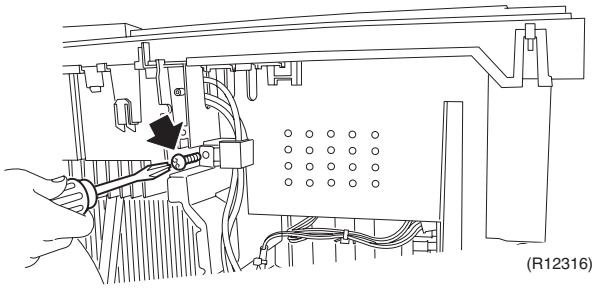
Step	Procedure		Points
4	Disconnect the 2 earth wires.		
5	Remove the 3 screws of the right side panel.		
6	Remove the screw of the electrical box.		

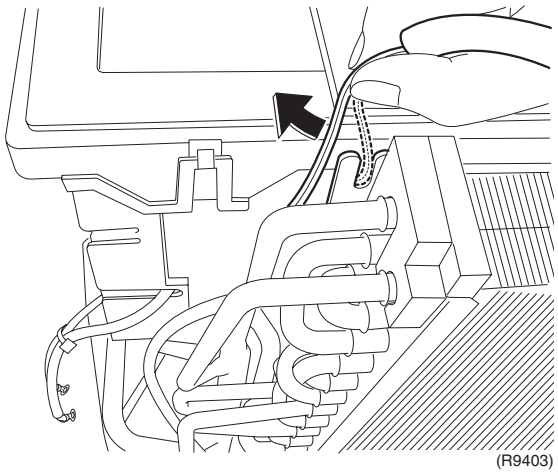
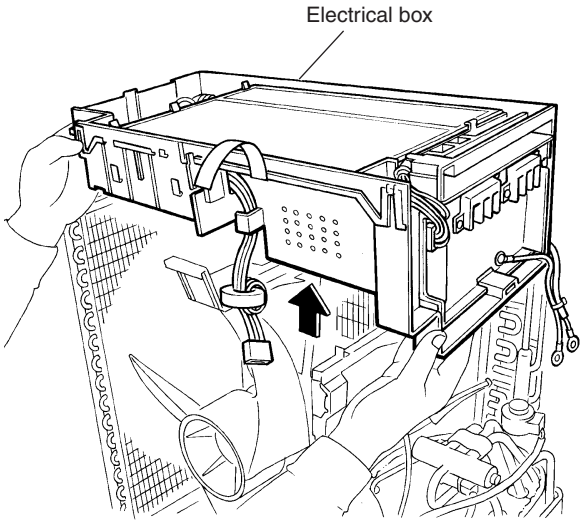
Step	Procedure		Points
7	Unfasten the hooks and remove the right side panel.	 	■ When reassembling, insert the 2 hooks of the lower part and the hook of the upper back.
8	Disconnect the connectors of the front side.		[S20]: outdoor electronic expansion valve coil [S40]: overload protector [S80]: four way valve coil [S90]: thermistors
9	Disconnect the relay connector for the compressor.		

Step	Procedure	Points
10	Release the clamp of the compressor relay harness with pliers.	
11	Detach the clamp and release the thermistor lead wires from the hook.	
12	Remove the screw.	





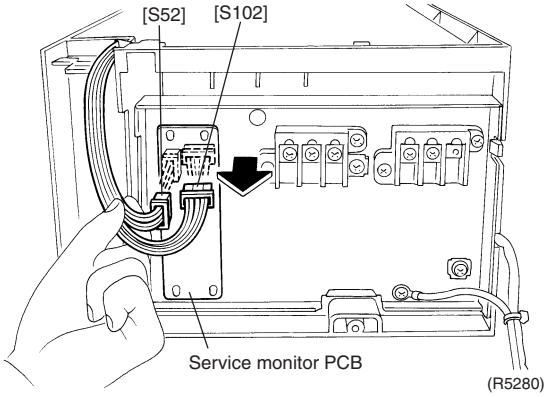
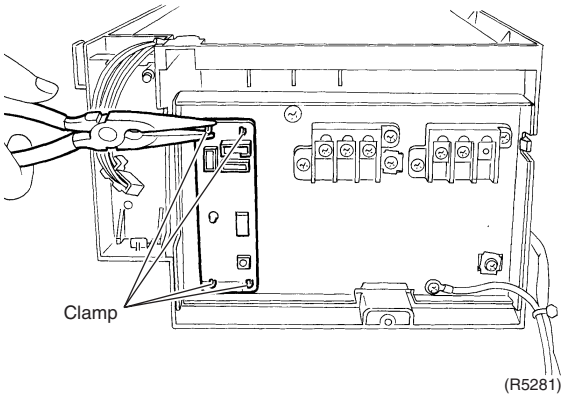
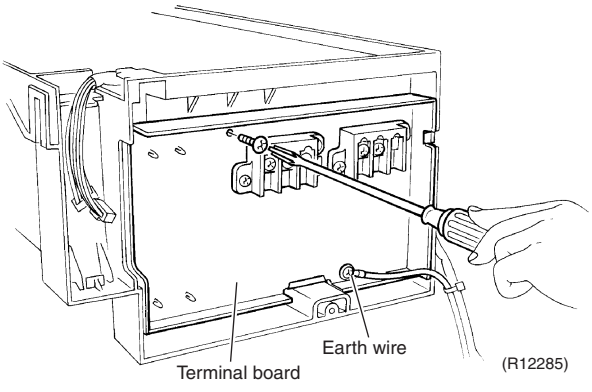


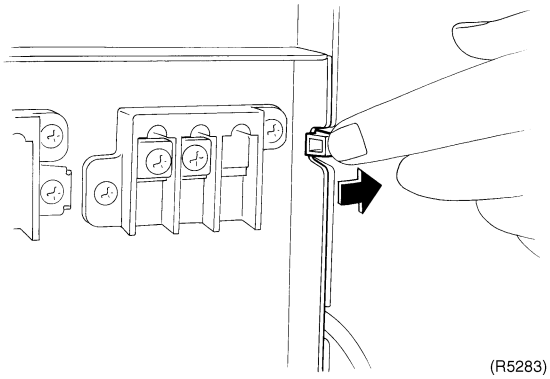
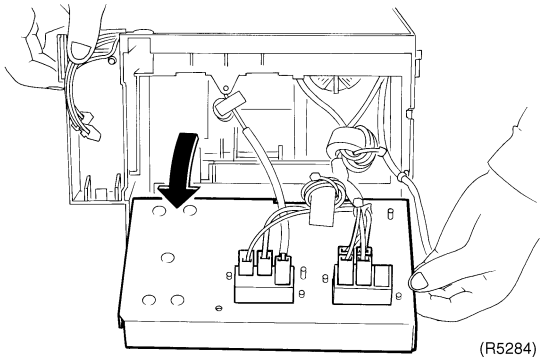
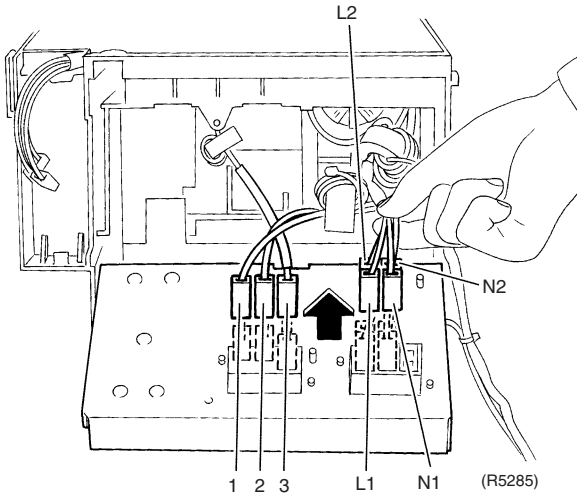
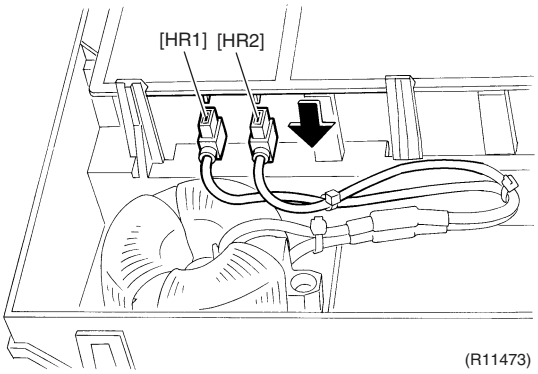
Step	Procedure		Points
13	Release the harness of the outdoor temperature thermistor from the hook.	 (R9403)	
14	Lift and remove the electrical box.	 (R5279)	

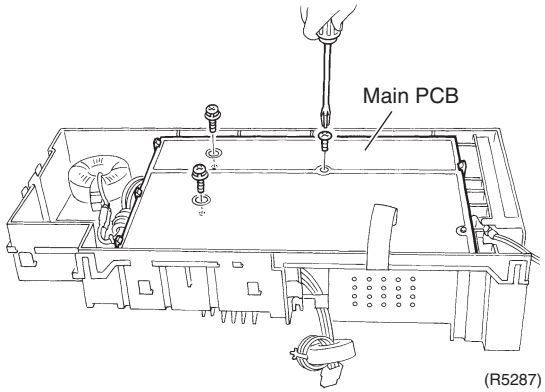
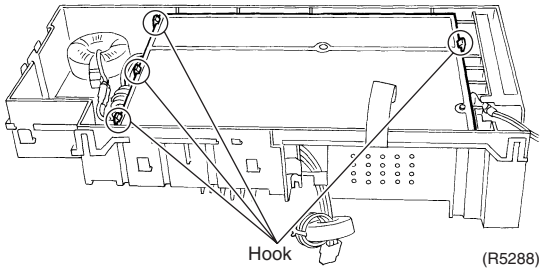
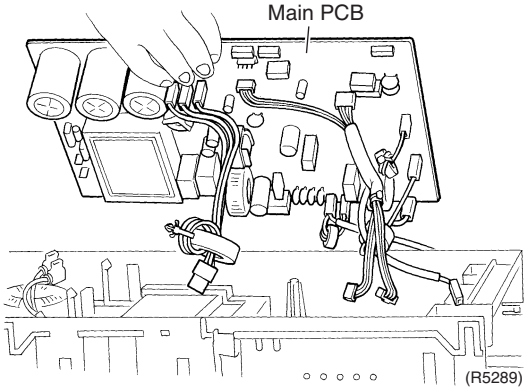
3.4 Removal of PCBs

Procedure

Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Disconnect the connectors [S52] [S102] from the service monitor PCB.		**Preparation** ■ Remove the electrical box according to the “Removal of Electrical Box”.
2	Detach the 4 clamps with pliers and remove the service monitor PCB.		
3	Remove the screws of the terminal board and the earth wire.		

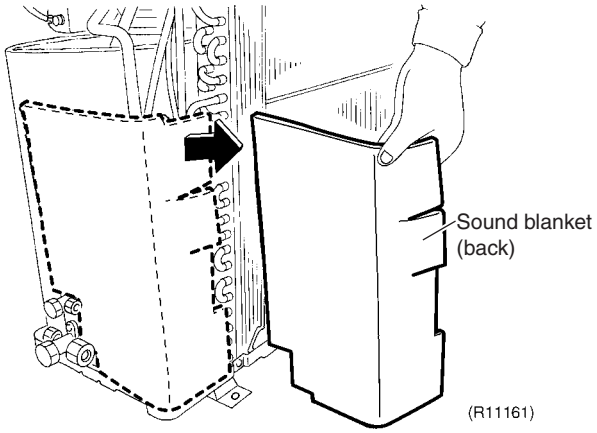
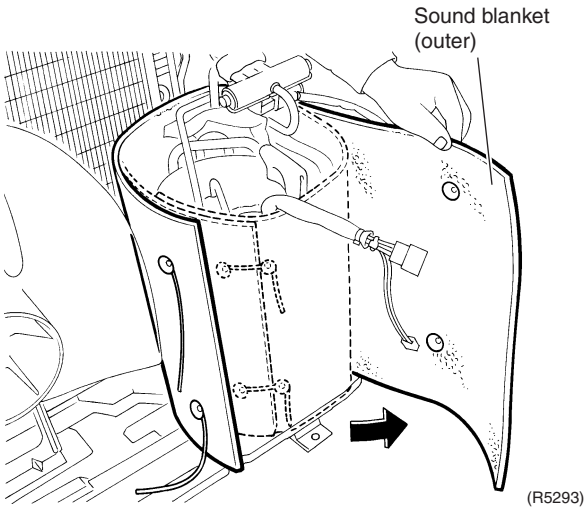
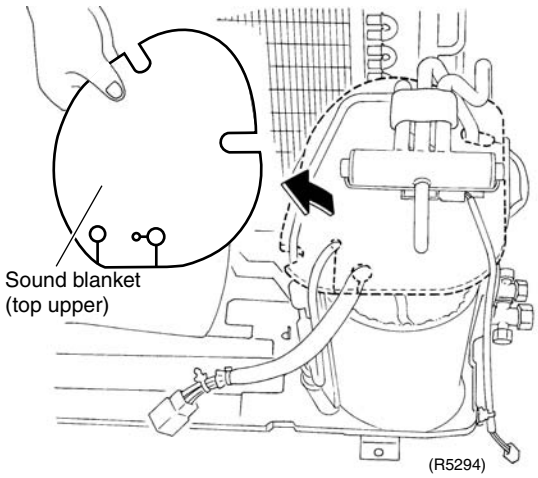
Step	Procedure		Points
4	Unfasten the hook on the right.	 (R5283)	
5	Open the terminal board.	 (R5284)	
6	Disconnect the harnesses.	 (R5285)	1: Black 2: White 3: Red L1: Black L2: Brown N1: White N2: Blue
7	Disconnect the 2 connectors for the reactor [HR1] [HR2].	 (R11473)	

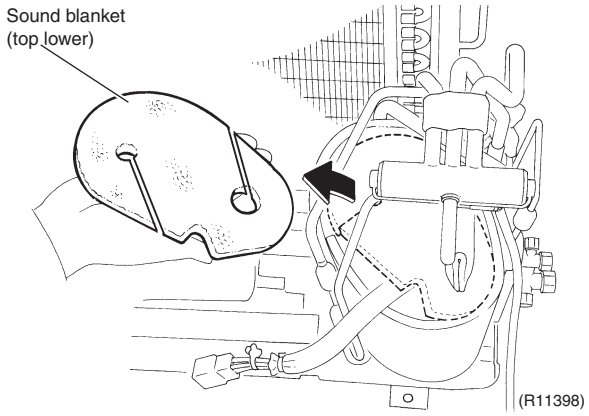
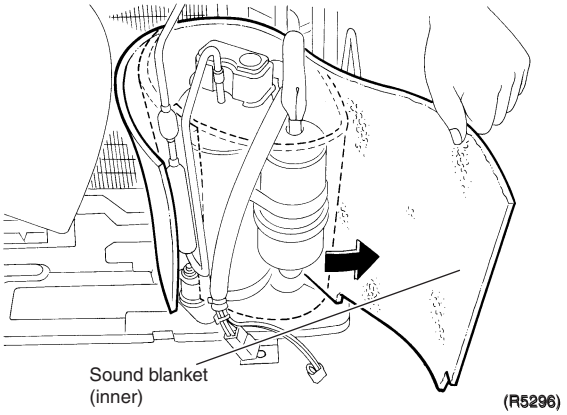
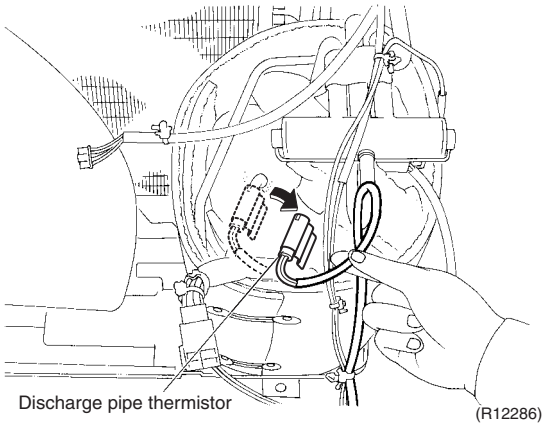
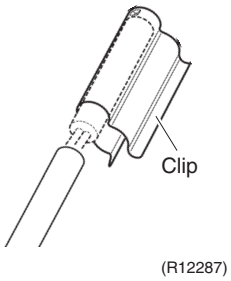
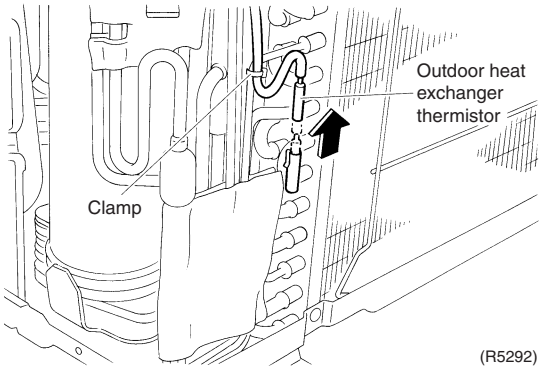
Step	Procedure		Points
8	Remove the 3 screws of the main PCB.		
9	Unfasten the 4 hooks.		
10	Lift up and remove the main PCB.		■ Refer to page 13 for detail.

3.5 Removal of Sound Blankets / Thermistors

Procedure

Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

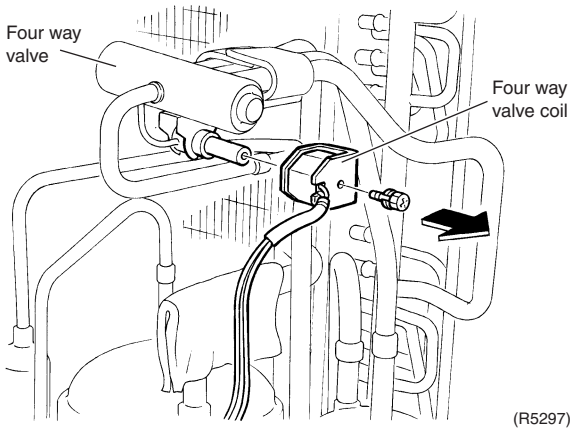
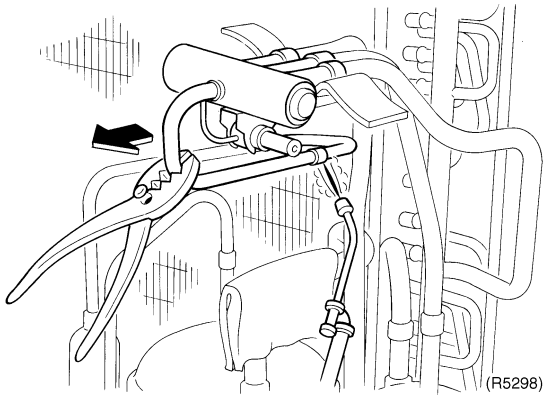
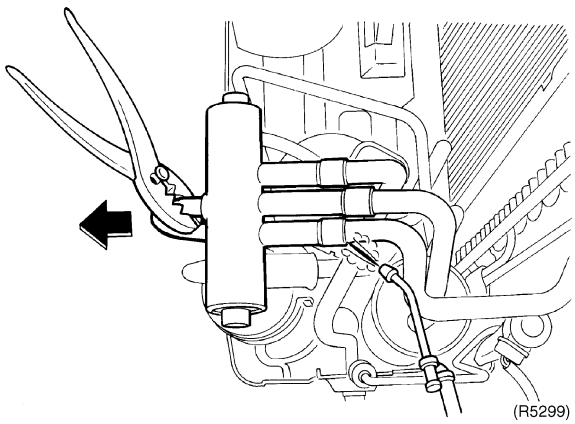
Step	Procedure		Points
1	Remove the sound blanket (back).		
2	Remove the sound blanket (outer).		■ Since the piping ports are torn easily, remove the sound blanket carefully.
3	Remove the sound blanket (top upper).		

Step	Procedure		Points
4	Remove the sound blanket (top lower).		
5	Remove the sound blanket (inner).		
6	Release the discharge pipe thermistor.		■ Be careful not to lose the clip for the thermistor. 
7	Cut the clamp and pull out the outdoor heat exchanger thermistor.		

3.6 Removal of Four Way Valve

Procedure

Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

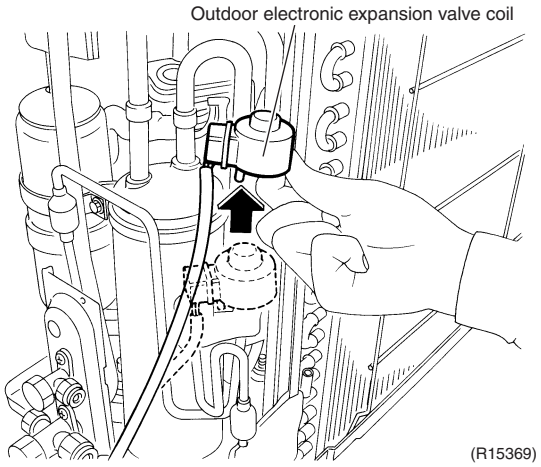
Step	Procedure		Points
1	Remove the screw and remove the four way valve coil.		**Warning** **Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas brazing machine.** **Warning** **If the refrigerant gas leaks during work, ventilate the room. (If the refrigerant gas is exposed to flames, toxic gas may be generated.)** **Caution** **From the viewpoint of global environment protection, do not discharge the refrigerant gas in the atmosphere. Make sure to collect all the refrigerant gas.**
■ Before working, make sure that the refrigerant gas is empty in the circuit. ■ Be sure to apply nitrogen replacement when heating up the brazed part.			**Cautions for restoration** 1. Restore the piping by non-oxidation brazing. 2. It is required to prevent the carbonization of the oil inside the four way valve and the deterioration of the gaskets affected by heat. (Keep below 120°C.) For the sake of this, wrap the four way valve with wet cloth and provide water so that the cloth does not dry.
2	Heat up the brazed part of the four way valve and disconnect.		
3	Heat up every brazed part in turn and disconnect.		**Note:** ■ Do not use a metal saw for cutting pipes by all means because the sawdust comes into the circuit. ■ When withdrawing the pipes, be careful not to pinch them firmly with pliers. The pipes may get deformed. ■ Provide a protective sheet or a steel plate so that the brazing flame cannot influence peripheries.

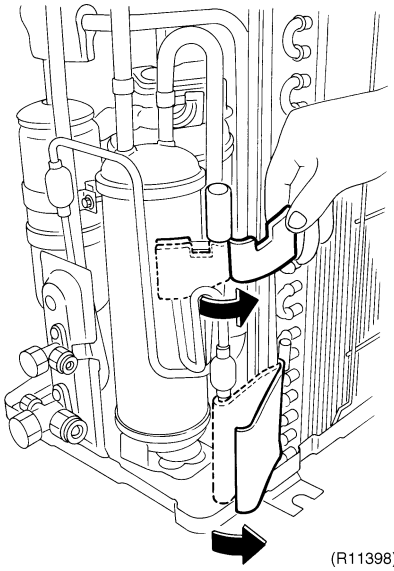
3.7 Removal of Outdoor Electronic Expansion Valve

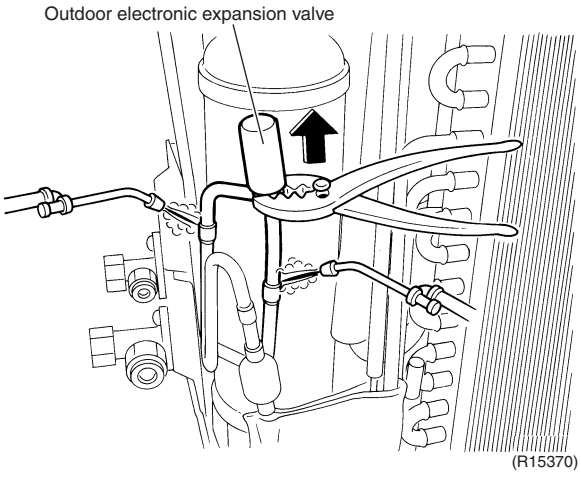
Procedure

Warning Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.

Step	Procedure	Points
1	Pull out the outdoor electronic expansion valve coil.	
2	Remove the sheets of putty.	
	■ Before working, make sure that the refrigerant gas is empty in the circuit. ■ Be sure to apply nitrogen replacement when heating up the brazed part.	**Warning** **Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas brazing machine.**
3	Heat up the 2 brazed parts of the outdoor electronic expansion valve and remove it.	**Warning** **If the refrigerant gas leaks during work, ventilate the room. (If the refrigerant gas is exposed to flames, toxic gas may be generated.)** **Caution** **From the viewpoint of global environment protection, do not discharge the refrigerant gas in the atmosphere. Make sure to collect all the refrigerant gas.**





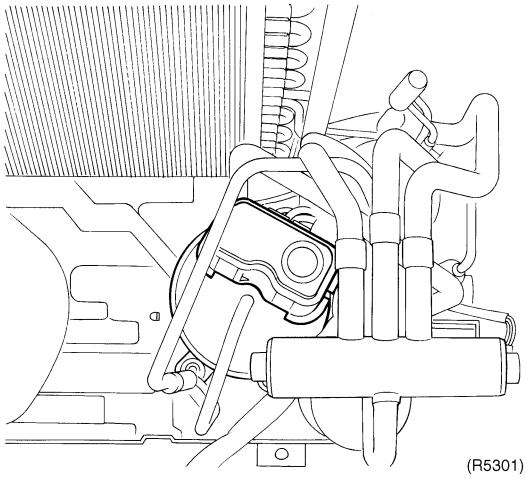


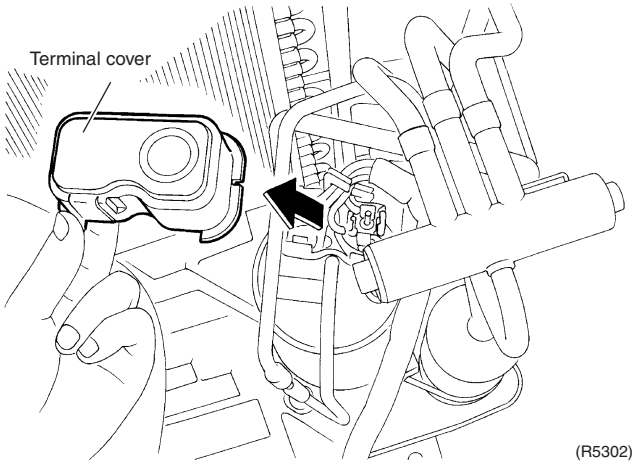
3.8 Removal of Compressor

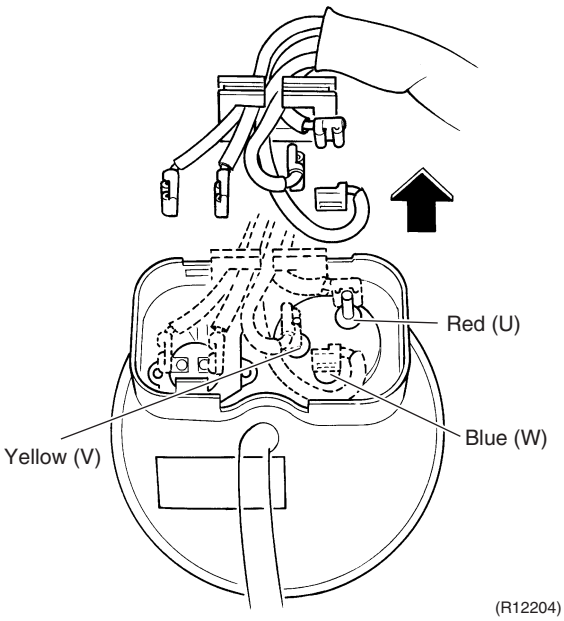
Procedure

Warning **Be sure to wait for 10 minutes or more after turning off all power supplies before disassembling work.**

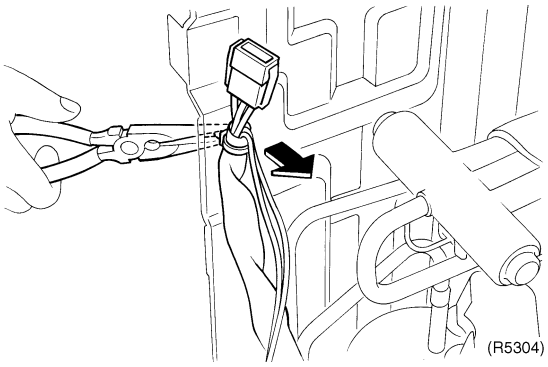
Step	Procedure	Points
1	Remove the terminal cover.	
2	Disconnect the lead wires of the compressor.	

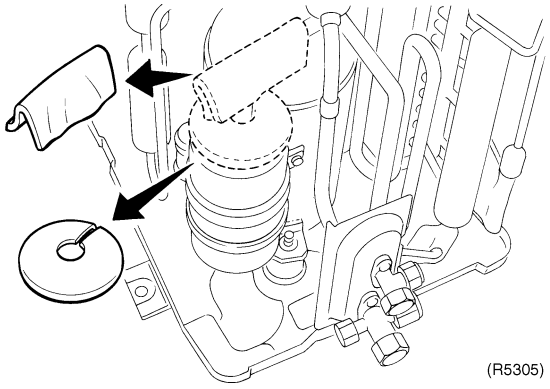


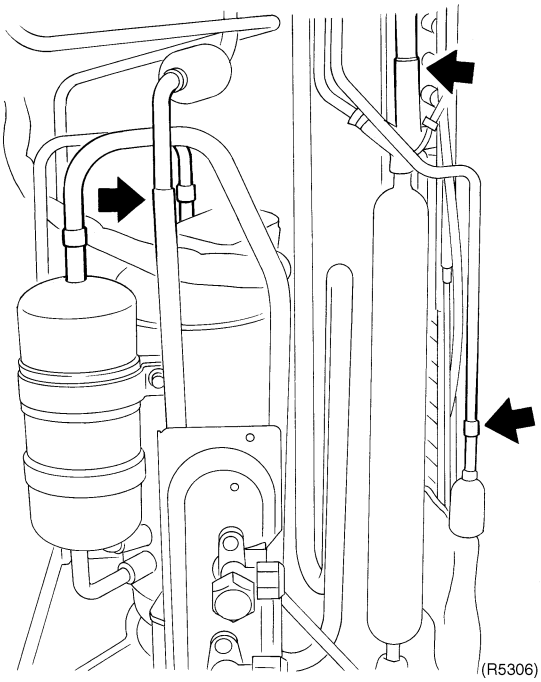


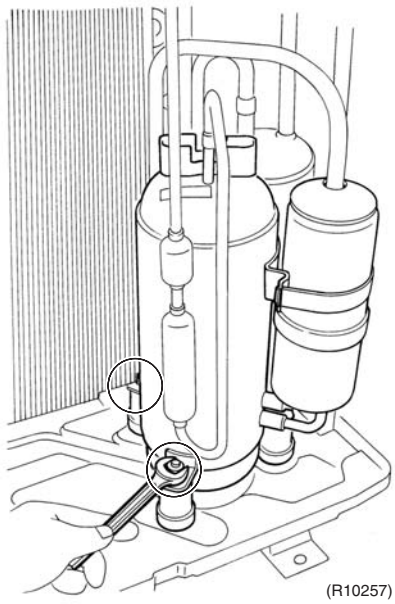
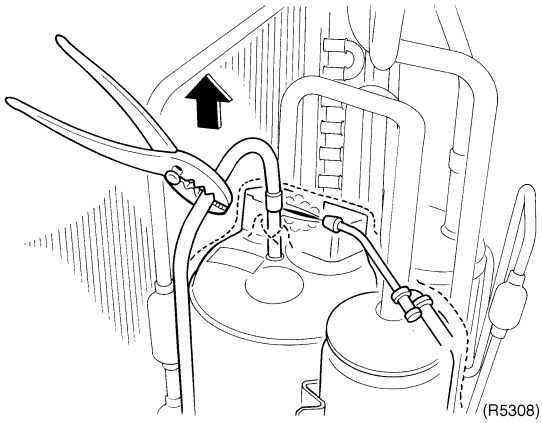
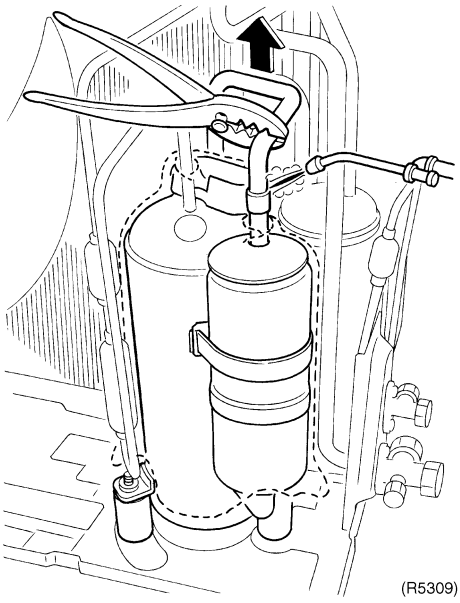


Step	Procedure	Points
3	Release the clamp with pliers to detach the compressor lead wires.	
4	Remove the putty.	
	■ Before working, make sure that the refrigerant gas is empty in the circuit. ■ Be sure to apply nitrogen replacement when heating up the brazed part.	**Warning** **Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas brazing machine.**
5	Heat up the brazed parts indicated by the arrows.	**Warning** **If the refrigerant gas leaks during work, ventilate the room. (If the refrigerant gas is exposed to flames, toxic gas may be generated.)** **Warning** **Since it may happen that the refrigerant oil in the compressor catches fire, prepare wet cloth so as to extinguish fire immediately.** **Caution** **From the viewpoint of global environment protection, do not discharge the refrigerant gas in the atmosphere. Make sure to collect all the refrigerant gas.**







Step	Procedure		Points
6	Remove the 2 nuts of the compressor.	 (R10257)	**Cautions for restoration** 1. Restore the piping by non-oxidation brazing. 2. It is required to prevent the carbonization of the oil inside the four way valve and the deterioration of the gaskets affected by heat. (Keep below 120°C.) For the sake of this, wrap the four way valve with wet cloth and provide water so that the cloth does not dry. **In case of difficulty with gas brazing machine** 1. Disconnect the brazed part where is easy to disconnect and restore. 2. Cut pipes on the main unit with a tube cutter in order to make it easy to disconnect. **Note:** ■ Do not use a metal saw for cutting pipes by all means because the sawdust comes into the circuit. ■ When withdrawing the pipes, be careful not to pinch them firmly with pliers. The pipes may get deformed. ■ Provide a protective sheet or a steel plate so that the brazing flame cannot influence peripheries. ■ Be careful so as not to burn the compressor terminals, the name plate, the heat exchanger fins.
7	Heat up the brazed part of the discharge side and disconnect.	 (R5308)	
8	Heat up the brazed part of the suction side and disconnect.	 (R5309)	
9	Lift the compressor up and remove it.		

Part 8
Trial Operation and Field Settings

1. Pump Down Operation 220
2. Forced Cooling Operation 221
3. Trial Operation 223
4. Field Settings 224
   - 4.1 When 2 Units are Installed in 1 Room 224
   - 4.2 Standby Electricity Saving 225
   - 4.3 Jumper and Switch Settings 225
5. Application of Silicon Grease to a Power Transistor and a Diode Bridge 226

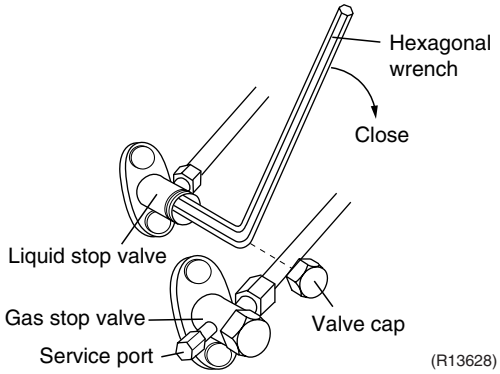
1. Pump Down Operation

Outline

In order to protect the environment, be sure to conduct pump down operation when relocating or disposing the unit.

Detail

1) Remove the valve caps from the liquid stop valve and the gas stop valve.
2) Carry out forced cooling operation.
3) After 5 to 10 minutes, close the liquid stop valve with a hexagonal wrench.
4) After 2 to 3 minutes, close the gas stop valve and stop the forced cooling operation.

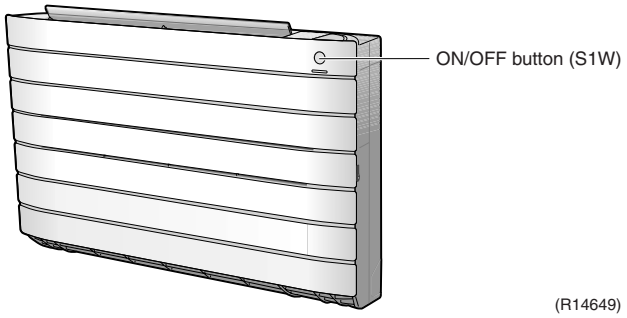


Refer to page 221 for forced cooling operation.

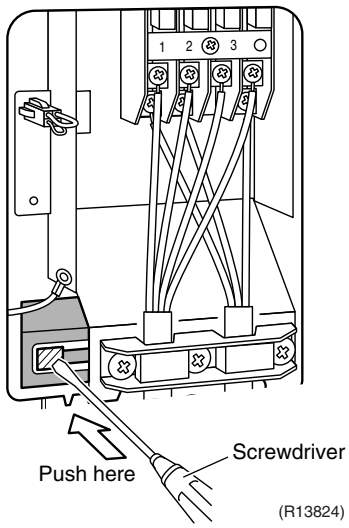
2. Forced Cooling Operation

Item	Forced Cooling
Conditions	The forced cooling operation is allowed when both the following conditions are met. 1) The outdoor unit is not abnormal and not in the 3-minute standby mode. 2) The outdoor unit is not operating.
Start	The forced cooling operation starts when any of the following conditions is fulfilled. 1) Press the forced cooling operation ON/OFF button (S1W) on the indoor unit for 5 seconds. 2) Press the forced cooling operation ON/OFF switch (SW1) on the outdoor unit.
Command frequency	25/35 class: 58 Hz 50 class: 66 Hz
End	The forced cooling operation ends when any of the following conditions is fulfilled. 1) The operation ends automatically after 15 minutes. 2) Press the forced cooling operation ON/OFF button (S1W) on the indoor unit again. 3) Press the ON/OFF button on the remote controller. 4) Press the forced cooling operation ON/OFF switch (SW1) on the outdoor unit.
Others	The protection functions are prior to all others in the forced cooling operation.

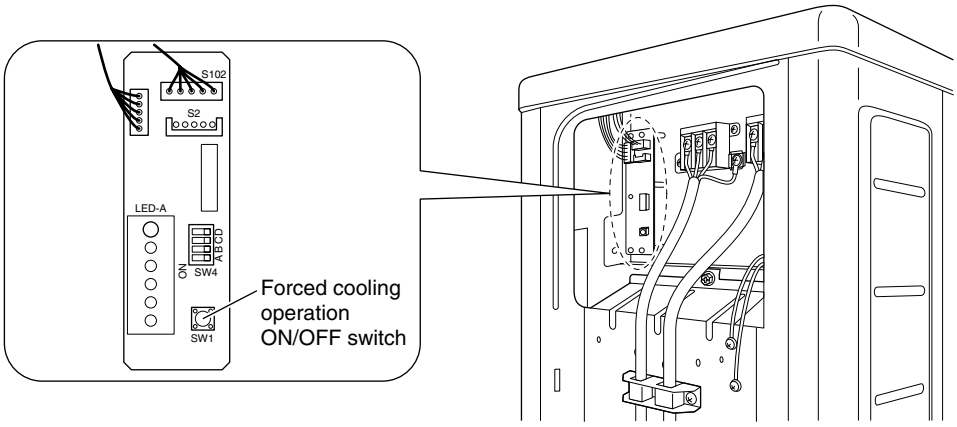
Indoor Unit



Outdoor Unit (25/35 class)



Outdoor Unit (50 class)



(R14176)

3. Trial Operation

Outline

1. Measure the power supply voltage and make sure that it falls in the specified range.
2. Trial operation should be carried out in either cooling or heating operation.
3. Carry out the trial operation in accordance with the operation manual to ensure that all functions and parts, such as flap movement, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system backs up the operation mode. The system then restarts operation with the previous operation mode when the circuit breaker is restored.

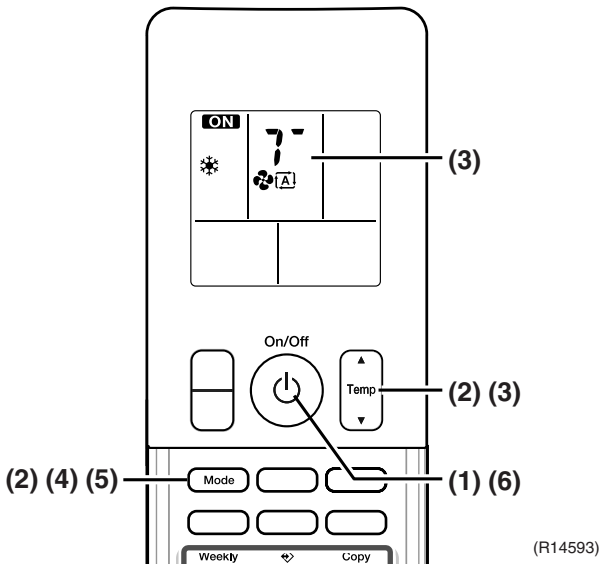
In cooling operation, select the lowest programmable temperature; in heating operation, select the highest programmable temperature.

- Trial operation may be disabled in either operation mode depending on the room temperature.
- After trial operation is complete, set the temperature to a normal level. (26°C to 28°C in cooling operation, 20°C to 24°C in heating operation)
- For protection, the system does not start for 3 minutes after it is turned off.

Detail

ARC466 Series

(1) Press the [On/Off] button to turn on the system.
(2) Press the center of the [Temp] button and the [Mode] button at the same time.
(3) Select 7- (trial operation) with the [Temp] ▲ or ▼ button.
(4) Press the [Mode] button to start the trial operation.
(5) Press the [Mode] button and select operation mode.
(6) Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press the [On/Off] button.



4. Field Settings

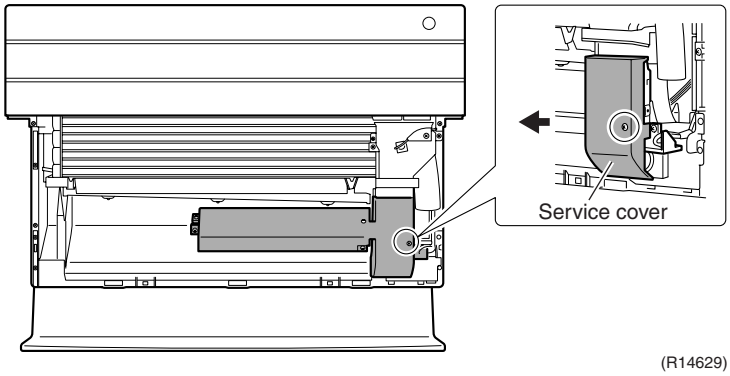
4.1 When 2 Units are Installed in 1 Room

Outline

When 2 indoor units are installed in 1 room, 1 of the 2 pairs of indoor unit and wireless remote controller can be set for different address.
Both the indoor unit PCB and the wireless remote controller need alteration.

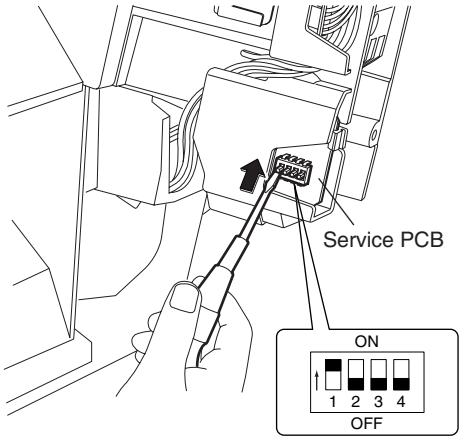
Indoor Unit PCB

(1) Remove the front panel, air filters and front grille.
(2) Remove the screw, and remove the service cover.



(R14629)

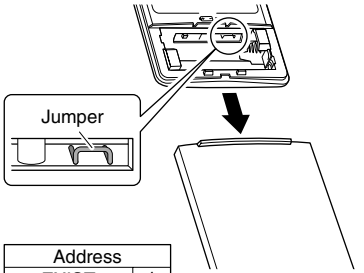
(3)Turn on the DIP switch [S2W-1] on the service PCB.



(R14630)

Wireless Remote Controller

(1) Remove the cover and take it off.
(2) Cut the address setting jumper.



Address	
EXIST	1
CUT	2

(R14631)

4.2 Standby Electricity Saving

Outline

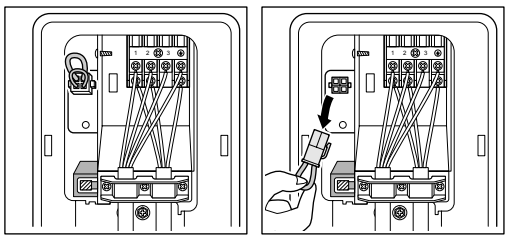
25/35 Class Only

This function turns power supply OFF to the outdoor unit and sets the indoor unit into energy-saving mode, thus reducing the power consumption of the air conditioner.

Detail

Following procedure is required for turning ON the function.

1. Check that the main power supply is turned OFF. Turn OFF if it has not been turned OFF.
2. Remove the stop valve cover.
3. Disconnect the selective connector for standby electricity saving.
4. Turn ON the main power supply.



Function OFF Function ON

The standby electricity saving function is turned OFF before shipping.

(R11820)

Caution Before connecting or disconnecting the selective connector for standby electricity saving, make sure that the main power supply is turned OFF.

4.3 Jumper and Switch Settings

Jumper	Function	When connected (factory set)	When cut
JB (on indoor unit PCB)	Fan speed setting when compressor stops for thermostat OFF. (effective only at cooling operation)	Fan speed setting ; Remote controller setting	Fan rpm is set to “0” <Fan stop>
JC (on indoor unit PCB)	Power failure recovery function	Auto-restart	The unit does not resume operation after recovering from a power failure. Timer ON/OFF settings are cleared.
J5 (on outdoor unit PCB of 25/35 class)	Improvement of defrost performance	Standard control	Reinforced control (ex. The frequency increases, the duration time of defrost lengthens.)

Switch	Function	OFF (factory set)	ON
SW4-C (on outdoor unit PCB of 50 class)	Improvement of defrost performance	Standard control	Reinforced control (ex. The frequency increases, the duration time of defrost lengthens.)

For the location of the jumper and the switch, refer to the following pages.
Indoor unit; page 8
Outdoor unit; page 11, 13

5. Application of Silicon Grease to a Power Transistor and a Diode Bridge

Applicable Models

All outdoor units using inverter type compressor for room air conditioner.

When the printed circuit board (PCB) of an outdoor unit is replaced, it is required that silicon grease (*1) is certainly applied to the heat radiation part (the contact point to the radiation fin) of the power transistor and diode bridge.

*1: Parts number of the silicon grease – 1172698 (Drawing number 3FB03758-1)

Details

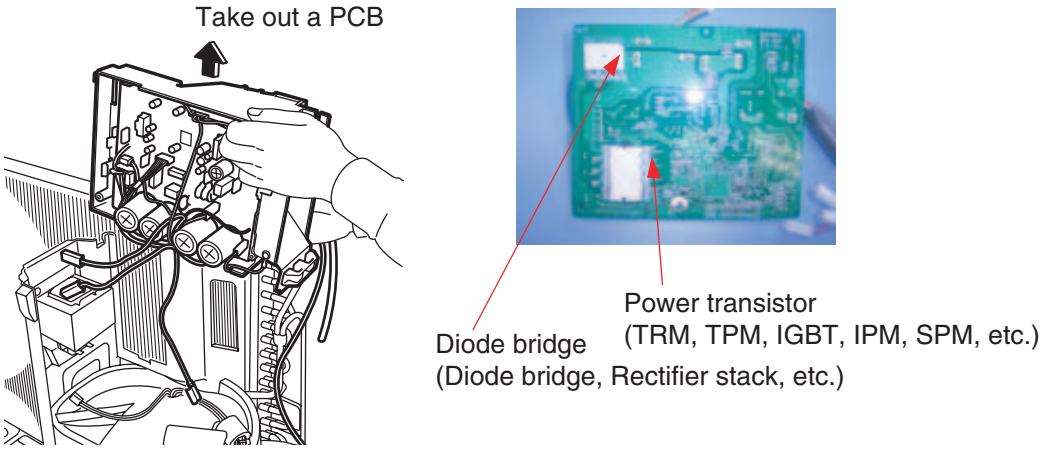
The silicon grease is an essential article for encouraging the heat radiation of the power transistor and the diode bridge. Applying the paste should be implemented in accordance with the following instruction.

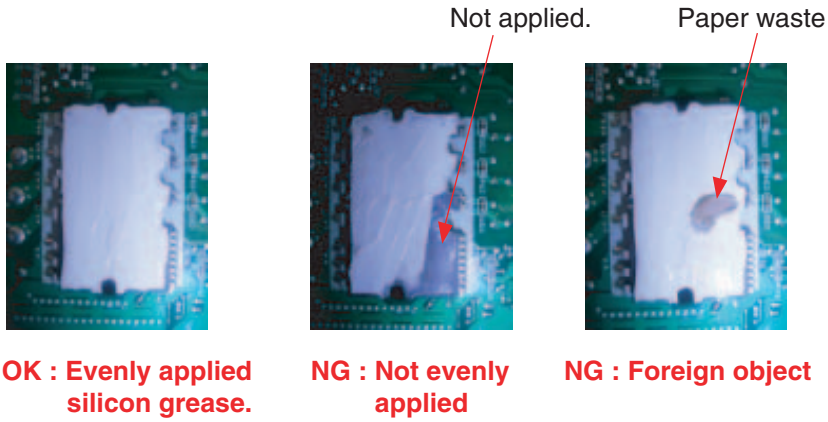
Note: There is the possibility of failure with smoke in case of bad heat radiation.

- Wipe off the old silicon grease completely on a radiation fin.
- Apply the silicon grease evenly to the whole.
- Do not leave any foreign object such as solder or paper waste between the power transistor and the radiation fin, and also the diode bridge, and the radiation fin.
- Tighten the screws of the power transistor and the diode bridge, and contact to the radiation fin without any gap.

<Example>

The shape of electrical box and PCB vary depending on the model.





(R9056)

Part 9
Appendix

1. Piping Diagrams....228
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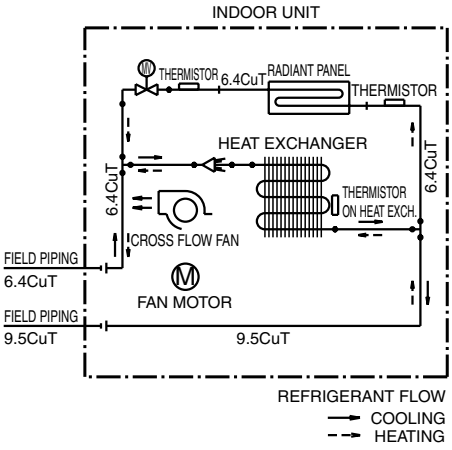
   1.2 Outdoor Unit....229
2. Wiring Diagrams....230
   2.1 Indoor Unit....230
   2.2 Outdoor Unit....231

1. Piping Diagrams

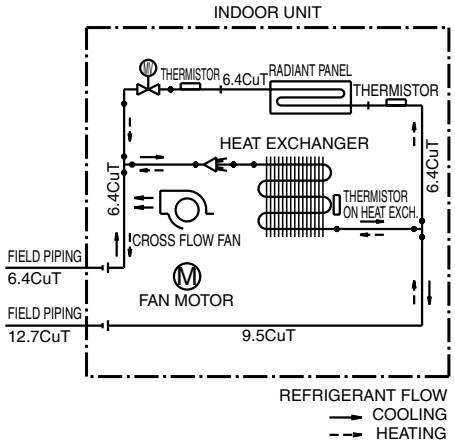
1.1 Indoor Unit

FVXG25/35K2V1B



4D071597

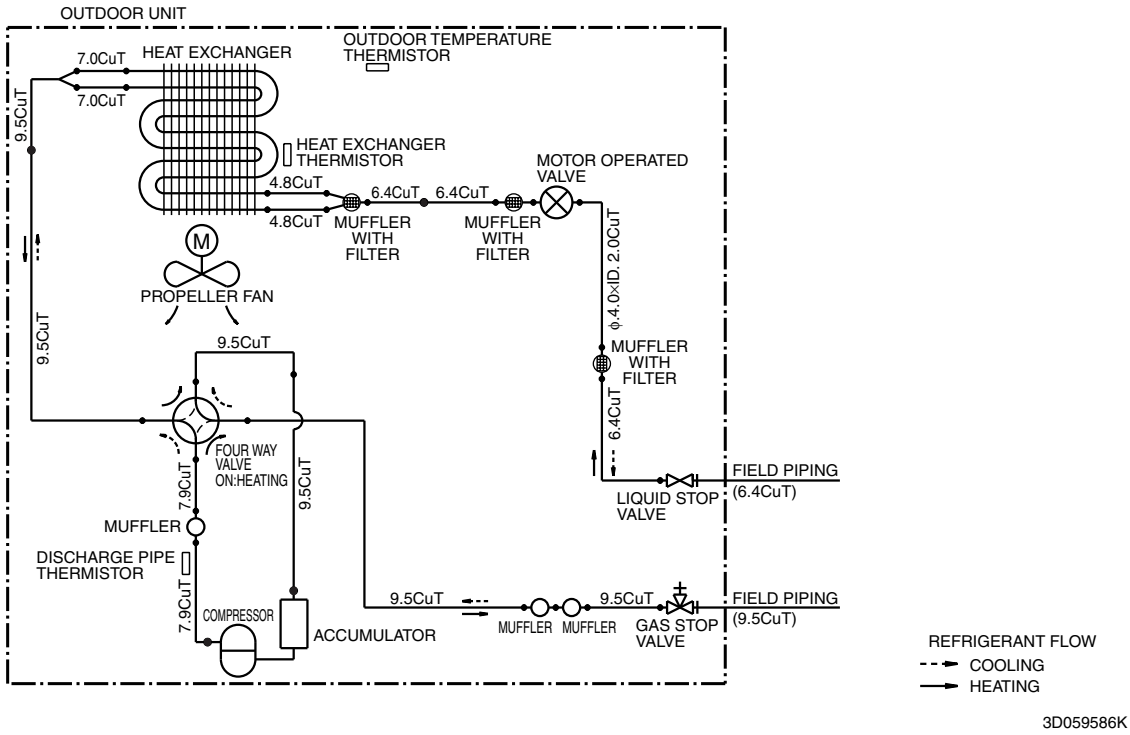
FVXG50K2V1B



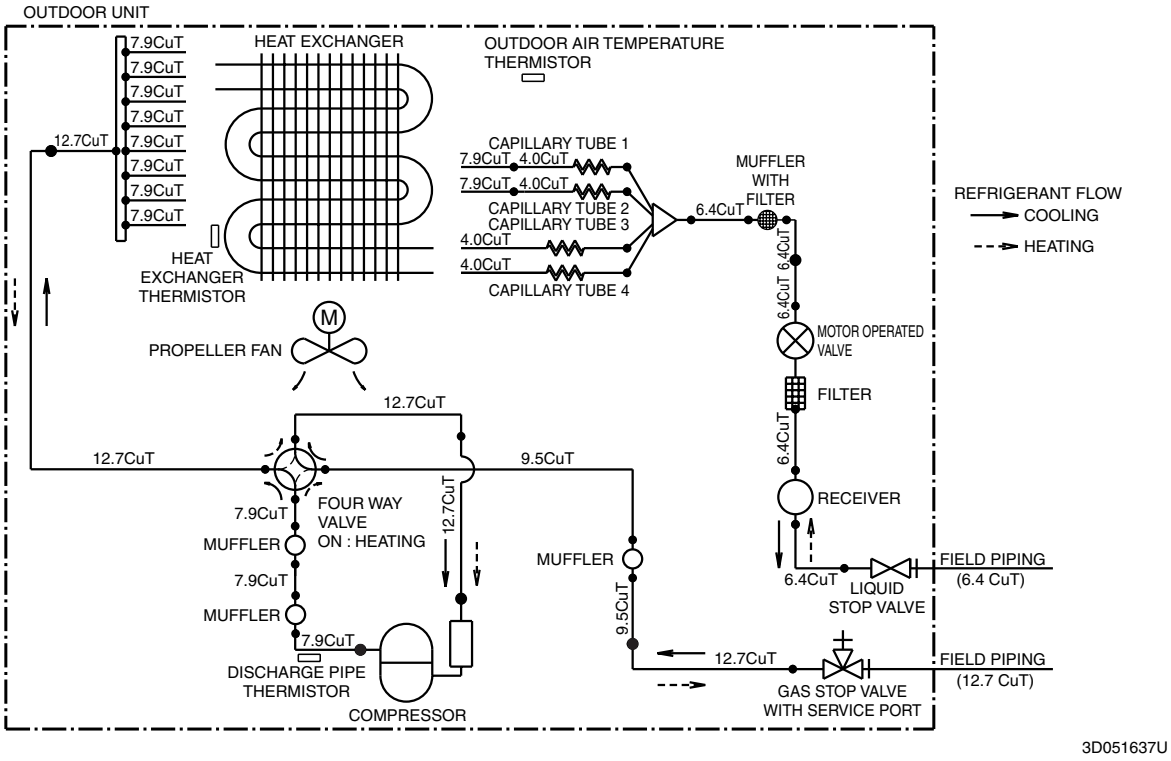
4D071598

1.2 Outdoor Unit

RXG25/35K2V1B



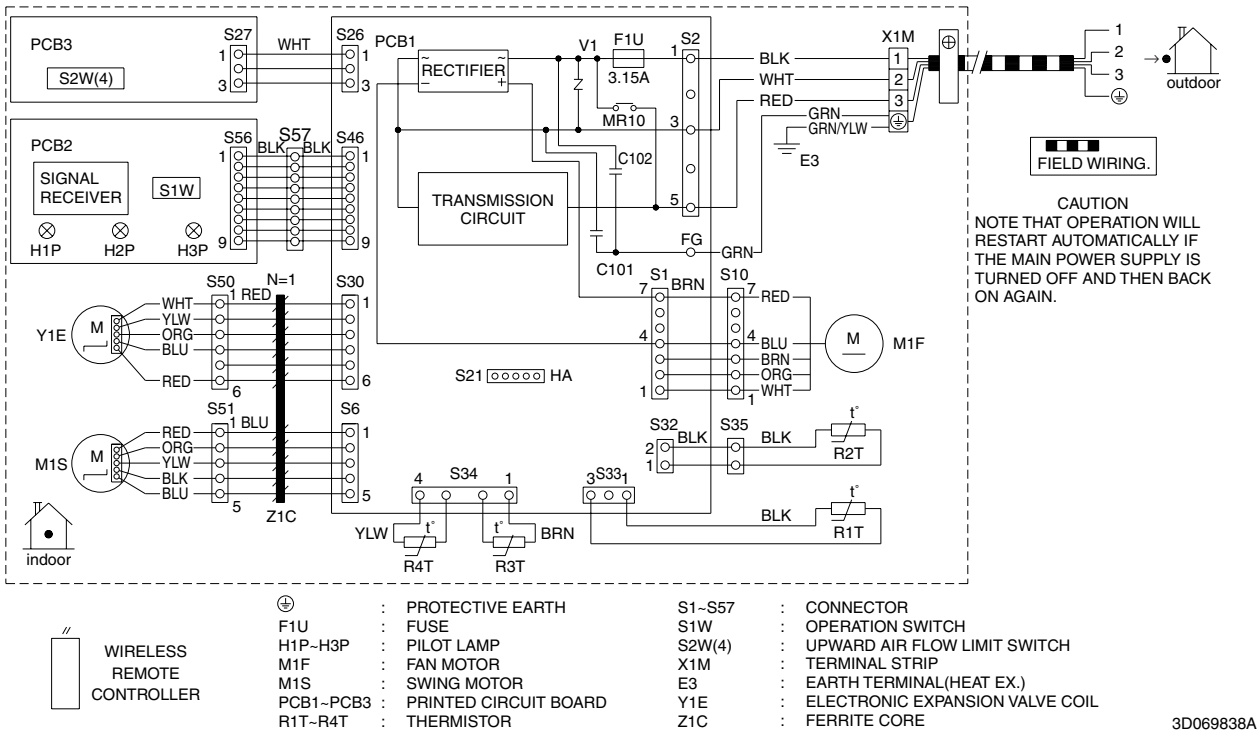
RXG50K2V1B



2. Wiring Diagrams

2.1 Indoor Unit

FVXG25/35/50K2V1B

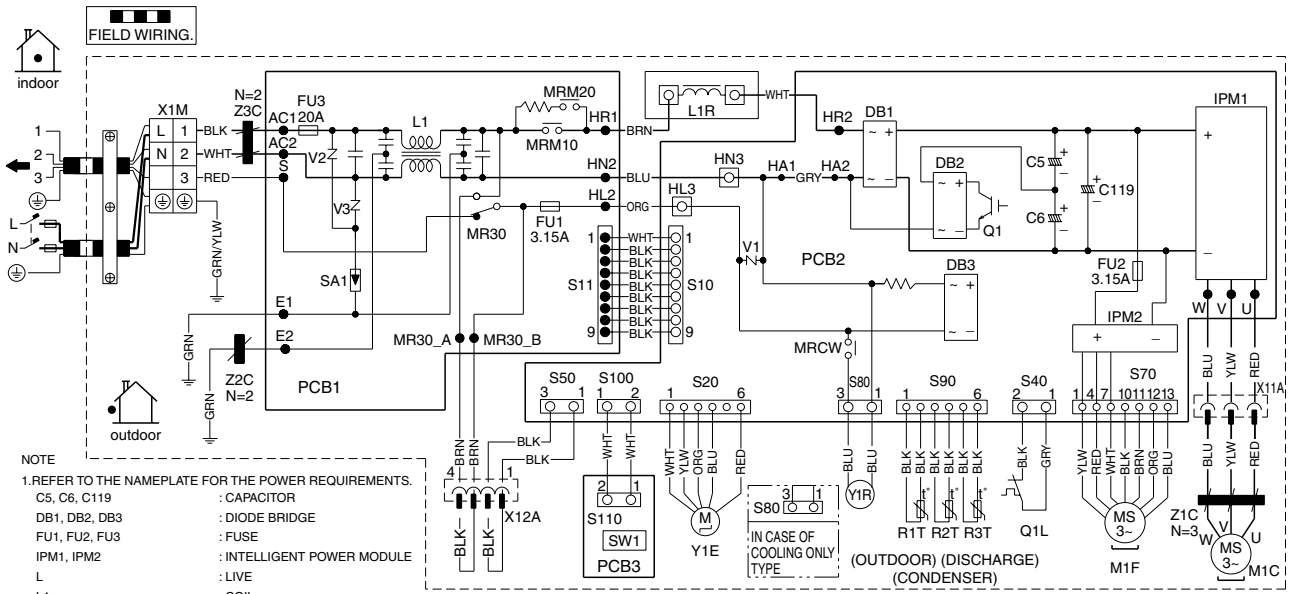


⏚	:	PROTECTIVE EARTH	S1~S57	:	CONNECTOR
F1U	:	FUSE	S1W	:	OPERATION SWITCH
H1P~H3P	:	PILOT LAMP	S2W(4)	:	UPWARD AIR FLOW LIMIT SWITCH
M1F	:	FAN MOTOR	X1M	:	TERMINAL STRIP
M1S	:	SWING MOTOR	E3	:	EARTH TERMINAL(HEAT EX.)
PCB1~PCB3	:	PRINTED CIRCUIT BOARD	Y1E	:	ELECTRONIC EXPANSION VALVE COIL
R1T~R4T	:	THERMISTOR	Z1C	:	FERRITE CORE

3D069838A

2.2 Outdoor Unit

RXG25/35K2V1B



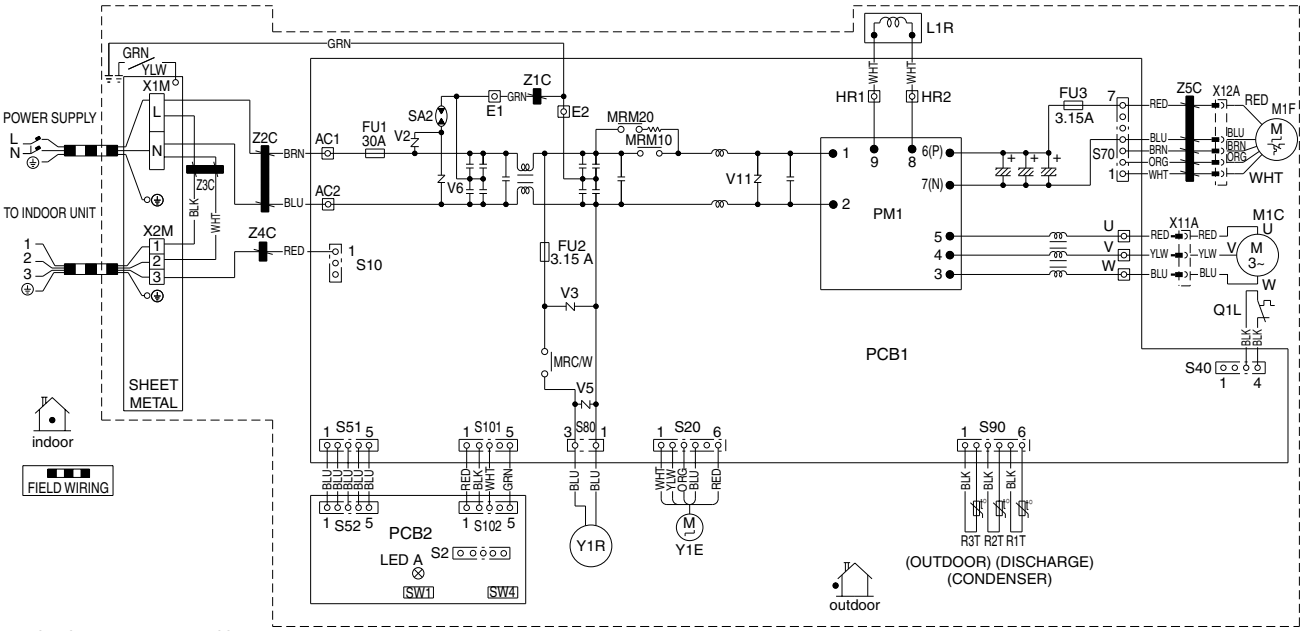
NOTE

1.REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

C5, C6, C119	: CAPACITOR
DB1, DB2, DB3	: DIODE BRIDGE
FU1, FU2, FU3	: FUSE
IPM1, IPM2	: INTELLIGENT POWER MODULE
L	: LIVE
L1	: COIL
L1R	: REACTOR
M1C	: COMPRESSOR MOTOR
M1F	: FAN MOTOR
MRCW, MR30, MRM10, MRM20	: MAGNETIC RELAY
N	: NEUTRAL
Q1L	: OVERLOAD PROTECTOR
PCB1, PCB2, PCB3	: PRINTED CIRCUIT BOARD
S10, S11, S20, S40, S50 S70, S80, S90, S100, S110	
HL3, HN3, X11A, X12A	: CONNECTOR
R1T, R2T, R3T	: THERMISTOR
SA1	: SURGE ARRESTER
SW1	: FORCED OPERATION SWITCH
V1, V2, V3	: VARISTOR
X1M	: TERMINAL STRIP
Y1E	: ELECTRONIC EXPANSION VALVE COIL
Y1R	: REVERSING SOLENOID VALVE COIL
Z1C, Z2C, Z3C	: FERRITE CORE
⏚	: PROTECTIVE EARTH

3D065704C

RXG50K2V1B



Z1C~Z5C	: FERRITE CORE	MRM10, MRM20		L	: LIVE	M1C	: COMPRESSOR MOTOR
X1M, X2M	: TERMINAL STRIP	MRC/W	: MAGNETIC RELAY	N	: NEUTRAL	M1F	: FAN MOTOR
Y1E	: ELECTRONIC EXPANSION VALVE COIL	R1T~R3T	: THERMISTOR	SW1	: FORCED OPERATION ON/OFF SW (SW1)	L1R	: REACTOR
V2, V3, V5, V6, V11	: VARISTOR	S2~S102	: CONNECTOR	SW4	: LOCAL SETTING SW (SW4)	Q1L	: OVERLOAD PROTECTOR
SA2	: SURGE ARRESTER	LEDA	: PILOT LAMP			PM1	: POWER MODULE
FU1, FU2, FU3	: FUSE					PCB1, 2	: PRINTED CIRCUIT BOARD
AC1, AC2						Y1R	: REVERSING SOLENOID VALVE COIL
U, V, W, X11A, X12A						SHEET METAL	: TERMINAL STRIP FIXED PLATE
E1, E2							
HR1, HR2	: CONNECTOR						

3D056095E

Warning

- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

JMI-0107

Organization:
DAIKIN INDUSTRIES, LTD.
AIR CONDITIONING MANUFACTURING DIVISION

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF COMMERCIAL AIR CONDITIONING, HEATING, COOLING, REFRIGERATING EQUIPMENT, HEATING EQUIPMENT, RESIDENTIAL AIR CONDITIONING EQUIPMENT, HEAT RECLAIM VENTILATION, AIR CLEANING EQUIPMENT, COMPRESSORS AND VALVES.

JQA-1452

Organization:
DAIKIN INDUSTRIES (THAILAND) LTD.

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF AIR CONDITIONERS AND THE COMPONENTS INCLUDING COMPRESSORS USED FOR THEM

EC99J2044

All of the Daikin Group's business facilities and subsidiaries in Japan are certified under the ISO 14001 international standard for environment management.

Dealer

DAIKIN INDUSTRIES, LTD.

Head Office:
Umeda Center Bldg., 2-4-12, Nakazaki-Nishi,
Kita-ku, Osaka, 530-8323 Japan

Tokyo Office:
JR Shinagawa East Bldg., 2-18-1, Konan,
Minato-ku, Tokyo, 108-0075 Japan

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